

**Object Storage Service**

# **Java SDK Developer Guide**

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# 1 Before You Start (SDK for Java)

This section describes version updates and compatibility and important notes about Object Storage Service (OBS) SDK for Java.

## Version Updates

[Table 1-1](#) describes the version updates and compatibility of OBS SDK for Java.

**Table 1-1** Version updates and compatibility of OBS SDK for Java

Version	Update	Description	Compatible or Not
<a href="#">v3.23.9.1</a>	New features Adaptation to third-party dependencies	New features: <ul style="list-style-type: none"><li>Allowed you to customize DNS resolvers.</li></ul> Adaptation to third-party dependencies: <ul style="list-style-type: none"><li>Removed java-xmlbuilder and used the default javax.xml library.</li></ul>	-
<a href="#">v3.23.9</a>	New features Adaptation to third-party dependencies	New features: <ul style="list-style-type: none"><li>Added the API for configuring bucket inventories.</li><li>Added client-side encryption.</li><li>Allowed you to configure the expiration time of fragments in lifecycle rules.</li></ul> Adaptation to third-party dependencies: <ul style="list-style-type: none"><li>Replaced Okio 2.10.0 with Okio 3.5.0.</li><li>Replaced OkHttp 4.10.0 with OkHttp 4.11.0.</li></ul>	Yes



Version	Update	Description	Compatible or Not
<a href="#">v3.23.5</a>	New features	<p>New features:</p> <ul style="list-style-type: none"> <li>Added the dual-write feature to buckets.</li> <li>Supported the Standard, Infrequent Access, and Archive storage classes.</li> <li>Supported capacity statistics on storage in three storage classes.</li> </ul>	Yes
<a href="#">v3.23.3</a>	New features Adaptation to third-party dependencies	<p>New features:</p> <ul style="list-style-type: none"> <li>Allowed you to query the progress of cross-region replication.</li> <li>Added the APIs for setting, obtaining, and deleting object tags.</li> </ul> <p>Adaptation to third-party dependencies:</p> <ul style="list-style-type: none"> <li>Replaced powermock-module-junit4 1.6.5 with powermock-module-junit4 2.0.9.</li> <li>Replaced powermock-api-mockito 1.6.5 with powermock-api-mockito2 2.0.9.</li> <li>Replaced mockito-core 1.10.19 with mockito-core 4.11.0.</li> </ul>	Yes
<a href="#">v3.22.12</a>	New features Adaptation to third-party dependencies	<p>New features:</p> <ul style="list-style-type: none"> <li>Added the posix-accessible APIs.</li> </ul> <p>Adaptation to third-party dependencies:</p> <ul style="list-style-type: none"> <li>Replaced log4j2 2.17.1 with log4j2 2.18.0.</li> <li>Replaced okhttp 4.9.3 with okhttp 4.10.0.</li> <li>Replaced jackson-core 2.13.0 with jackson-core 2.13.3.</li> <li>Replaced jackson-databind 2.13.0 with jackson-databind 2.13.4.1.</li> <li>Replaced jackson-annotations 2.13.0 with jackson-annotations 2.13.3.</li> </ul>	Yes

Version	Update	Description	Compatible or Not
<a href="#">v3.22.3</a>	Adaptation to third-party dependencies	<ul style="list-style-type: none"> <li>Replaced log4j2 2.17.0 with log4j2 2.17.1.</li> <li>Replaced okhttp 4.9.1 with okhttp 4.9.3.</li> <li>Replaced Okio 2.7.0 with Okio 2.10.0.</li> <li>Replaced jackson-core 2.12.5 with jackson-core 2.13.0.</li> <li>Replaced jackson-databind 2.12.5 with jackson-databind 2.13.0.</li> <li>Replaced jackson-annotations 2.12.5 with jackson-annotations 2.13.0.</li> </ul>	Yes
<a href="#">v3.21.12</a>	Adaptation to third-party dependencies	Replaced log4j2 2.16.0 with log4j2 2.17.0.	Yes
v3.21.11	New features Adaptation to third-party dependencies	<p>New features:</p> <ul style="list-style-type: none"> <li>Allowed you to add user-defined headers in the requests.</li> </ul> <p>Adaptation to third-party dependencies:</p> <ul style="list-style-type: none"> <li>Replaced jackson-core 2.11.1 with jackson-core 2.12.5.</li> <li>Replaced jackson-databind 2.11.1 with jackson-databind 2.12.5.</li> <li>Replaced jackson-annotations 2.11.1 with jackson-annotations 2.12.5.</li> <li>Replaced OkHttp 4.8.0 with OkHttp 4.9.1.</li> <li>Replaced log4j2 2.14.1 with log4j2 2.16.0.</li> </ul>	Yes

For more information about version updates, see [ChangeLog](#).

## Compatibility

- For more information about version updates, see [ChangeLog](#).
- Recommended JDK versions: JDK 8 or later

## Important Notes

- To make the most of this document, download the latest version of Java SDK from [SDK Download and Installation \(SDK for Java\)](#).

- Make sure that you are familiar with basic OBS concepts, such as [buckets](#), [objects](#), [access keys \(AKs/SKs\)](#), and [endpoints and domain names](#).
- You can learn about how to call an API through the OBS SDK for Java by referring to [Using an OBS Client](#).
- After an API is called using an instance of **ObsClient**, if no exception is thrown, the return value is valid. If an exception is thrown, the operation fails. For details about errors, see [SDK Exceptions \(SDK for Java\)](#).
- After any API is called using an instance of **ObsClient**, [common response headers](#) including their subheaders will be returned.
- Some features are available only in some regions. If an API call returns the 405 HTTP status code, check whether the region supports this feature. For details, refer to [Function Overview](#) or [submit a service ticket](#) to contact technical support.

# 2 API Overview (SDK for Java)

## Bucket APIs

[Table 2-1](#) lists the bucket-related APIs.

**Table 2-1** Bucket APIs

API	Method	Function
<a href="#">Creating a Bucket (SDK for Java)</a>	<code>obsClient.createBucket(CreateBucketRequest request)</code>	Creates a bucket and configures the storage class, region, and access permissions for the bucket.
<a href="#">Obtaining a Bucket List (SDK for Java)</a>	<code>obsClient.listBuckets(ListBucketsRequest request)</code>	Lists all buckets that meet the specified conditions under the current account and returns them in alphabetical order.
<a href="#">Deleting a Bucket (SDK for Java)</a>	<code>obsClient.deleteBucket(String bucketName)</code>	Deletes an empty bucket (the name of a deleted bucket can be reused at least 30 minutes after the deletion).
<a href="#">Checking Whether a Bucket Exists (SDK for Java)</a>	<code>obsClient.headBucket(String bucketName)</code>	Checks whether a bucket exists (HTTP status code <b>200</b> indicates the bucket exists, while <b>404</b> indicates it does not).

API	Method	Function
<a href="#">Obtaining Bucket Metadata (SDK for Java)</a>	<code>obsClient.getBucketMetadata(BucketMetadataInfoRequest request)</code>	Returns information about a bucket, including the storage class, region, CORS rules, and redundancy policy.
<a href="#">Configuring a Bucket ACL (SDK for Java)</a>	<code>obsClient.setBucketAcl(String bucketName, AccessControlList acl)</code>	Sets an ACL for a bucket.
<a href="#">Obtaining a Bucket ACL (SDK for Java)</a>	<code>obsClient.getBucketAcl(String bucketName)</code>	Returns the ACL of a bucket.
<a href="#">Configuring a Bucket Policy (SDK for Java)</a>	<code>obsClient.setBucketPolicy(String bucketName, String policy)</code>	Sets a bucket policy.
<a href="#">Obtaining the Policy of a Bucket (SDK for Java)</a>	<code>obsClient.getBucketPolicy(String bucketName)</code>	Returns a bucket policy.
<a href="#">Deleting a Bucket Policy (SDK for Java)</a>	<code>obsClient.deleteBucketPolicy(String bucketName)</code>	Deletes a bucket policy ( <b>204 No Content</b> is returned if the policy is deleted successfully or actually does not exist).
<a href="#">Obtaining the Region of a Bucket (SDK for Java)</a>	<code>obsClient.getBucketLocation(String bucketName)</code>	Returns the region where the bucket is created.
<a href="#">Obtaining Storage Information of a Bucket (SDK for Java)</a>	<code>obsClient.getBucketStorageInfo(String bucketName)</code>	Returns the storage information about a bucket, including the storage usage and the object count in the bucket.
<a href="#">Configuring a Storage Quota (SDK for Java)</a>	<code>obsClient.setBucketQuota(String bucketName, BucketQuota bucketQuota)</code>	Sets a limit on the capacity of a bucket.
<a href="#">Obtaining a Bucket Storage Quota (SDK for Java)</a>	<code>obsClient.getBucketQuota(String bucketName)</code>	Returns the quota of a bucket ( <b>0</b> indicates there is no upper limit to the capacity of the bucket).

API	Method	Function
<a href="#">Configuring a Storage Class for a Bucket (SDK for Java)</a>	<code>obsClient.setBucketStoragePolicy(String bucketName, BucketStoragePolicyConfiguration bucketStorage)</code>	Specifies the storage class for a bucket (after the bucket storage class is configured, if you do not specifically configure the storage class for objects in that bucket, those objects will inherit the storage class of the bucket by default).
<a href="#">Obtaining the Storage Class of a Bucket (SDK for Java)</a>	<code>obsClient.getBucketStoragePolicy(String bucketName)</code>	Returns the storage class of a bucket.
<a href="#">Configuring an Inventory Rule (SDK for Java)</a>	<code>obsClient.setInventoryConfiguration(SetInventoryConfigurationRequest request)</code>	Configures an inventory rule for a bucket (you can specify the object attributes to include in inventories, such as the object version, size, storage class, tag, encryption status, and last modification).
<a href="#">Obtaining an Inventory Rule (SDK for Java)</a>	<code>obsClient.getInventoryConfiguration(GetInventoryConfigurationRequest request)</code>	Returns a bucket inventory rule specified by the rule ID.
<a href="#">Listing Inventory Rules (SDK for Java)</a>	<code>obsClient.listInventoryConfiguration(ListInventoryConfigurationRequest request)</code>	Returns all inventory rules of a bucket in a single response.
<a href="#">Deleting an Inventory Rule (SDK for Java)</a>	<code>obsClient.deleteInventoryConfiguration(DeleteInventoryConfigurationRequest request)</code>	Deletes a bucket inventory rule specified by the rule ID.

## Object APIs

[Table 2-2](#) lists object-related APIs.

**Table 2-2** Object APIs

API	Method	Function
<a href="#">Uploading an Object - Streaming (SDK for Java)</a>	<code>obsClient.putObject(PutObjectRequest request)</code>	Uploads local files of any type that are smaller than 5 GB to a bucket in streaming mode.
<a href="#">Uploading an Object - File-Based (SDK for Java)</a>	<code>obsClient.putObject(PutObjectRequest request)</code>	Uploads local files of any type to a bucket over the Internet.
<a href="#">Obtaining the Upload Progress (SDK for Java)</a>	<code>PutObjectRequest.setProgressListener(ProgressListener progressListener)</code>	Returns the progress of uploading an object.
<a href="#">Creating a Folder (SDK for Java)</a>	<code>obsClient.putObject(PutObjectRequest request)</code>	Creates a folder in a bucket to categorize the data.
<a href="#">Configuring Object Metadata (SDK for Java)</a>	<code>obsClient.setObjectMetadata(SetObjectMetadataRequest request)</code>	Sets object attributes (such as the size, MIME type, MD5 value, storage class, or user-defined metadata) when uploading an object in streaming, file-based, or multipart mode, or when copying an object.
<a href="#">Initiating a Multipart Upload (SDK for Java)</a>	<code>obsClient.initiateMultipartUpload(InitiateMultipartUploadRequest request)</code>	Initiates a multipart upload and returns a globally unique upload ID.
<a href="#">Uploading a Part (SDK for Java)</a>	<code>obsClient.uploadPart(UploadPartRequest request)</code>	Uploads parts to the bucket based on the upload ID returned by the preceding API.
<a href="#">Assembling Parts (SDK for Java)</a>	<code>obsClient.completeMultipartUpload(CompleteMultipartUploadRequest request)</code>	Completes a multipart upload based on the multipart upload ID and information about the uploaded parts (including <b>PartNumber</b> and <b>ETag</b> ).
<a href="#">Aborting a Multipart Upload (SDK for Java)</a>	<code>obsClient.abortMultipartUpload(AbortMultipartUploadRequest request)</code>	Aborts a multipart upload specified by the upload ID in a bucket.

API	Method	Function
<a href="#">Listing Uploaded Parts (SDK for Java)</a>	<code>obsClient.listParts(ListPartsRequest request)</code>	Returns the uploaded parts in a bucket based on the specified multipart upload ID.
<a href="#">Listing Multipart Uploads (SDK for Java)</a>	<code>obsClient.listMultipartUploads(ListMultipartUploadsRequest request)</code>	Lists ongoing multipart uploads.
<a href="#">Configuring Lifecycle Rules (SDK for Java)</a>	<code>obsClient.putObject(PutObjectRequest request)</code>	Configures a lifecycle rule for objects to periodically delete objects in the bucket or transition object storage classes (the object expiration time set using this API takes precedence over that set in a bucket lifecycle rule).
<a href="#">Uploading an Object - Append (SDK for Java)</a>	<code>obsClient.appendObject(AppendObjectRequest request)</code>	Appends content to an existing object.
<a href="#">Uploading an Object - Resumable (SDK for Java)</a>	<code>obsClient.uploadFile(UploadFileRequest request)</code>	Provides the resumable function based on the API for multipart uploads to better respond to network disconnections or program crashes.
<a href="#">Uploading an Object - Browser-Based (SDK for Java)</a>	<code>obsClient.createPostSignature(PostSignatureRequest request)</code>	Uploads an object up to 5 GB in size to a bucket in the HTML form.
<a href="#">Downloading an Object - Streaming (SDK for Java)</a>	<code>obsClient.getObject(GetObjectRequest request)</code>	Downloads an object from OBS to a local directory or memory (the returned results contain the object name, attributes, input stream, and bucket information).
<a href="#">Downloading an Object - Partial (SDK for Java)</a>	<code>obsClient.getObject(GetObjectRequest request)</code>	Downloads the partial data of an object.



API	Method	Function
<a href="#">Obtaining the Download Progress (SDK for Java)</a>	<code>GetObjectRequest.setProgressListener(ProgressListener progressListener)</code>	Returns the progress of downloading an object.
<a href="#">Downloading an Object - Conditional (SDK for Java)</a>	<code>obsClient.getObject(GetObjectRequest request)</code>	Returns the objects that meet one or more specified conditions.
<a href="#">Rewriting Response Headers (SDK for Java)</a>	<code>obsClient.getObject(GetObjectRequest request)</code>	Rewrites the following HTTP/HTTPS response headers when downloading an object: <b>Content-Type, Content-Language, Expires, Cache-Control, Content-Disposition, and Content-Encoding.</b>
<a href="#">Obtaining User-defined Metadata (SDK for Java)</a>	<code>obsClient.getObject(GetObjectRequest request)</code>	Returns the user-defined object metadata after the object is successfully downloaded.
<a href="#">Restoring an Archive Object (SDK for Java)</a>	<code>obsClient.restoreObject(RestoreObjectRequest request)</code>	Restores and downloads an Archive object.
<a href="#">Downloading an Object - Resumable (SDK for Java)</a>	<code>obsClient.downloadFile(DownloadFileRequest request)</code>	Adds the resumable function to the partial download API.
<a href="#">Configuring Object Metadata (SDK for Java)</a>	<code>obsClient.setObjectMetadata(SetObjectMetadataRequest request)</code>	Configures the object metadata.
<a href="#">Obtaining Object Metadata (SDK for Java)</a>	<code>obsClient.getObjectMetadata(GetObjectMetadataRequest request)</code>	Returns the object metadata.
<a href="#">Configuring an Object ACL (SDK for Java)</a>	<code>obsClient.setObjectAcl(SetObjectAclRequest request)</code>	Sets an ACL for an object when uploading the object or modifies the ACL of an existing object by calling an ACL API.
<a href="#">Obtaining an Object ACL (SDK for Java)</a>	<code>obsClient.getObjectAcl(GetObjectAclRequest request)</code>	Obtains the ACL of an object in a specified bucket.

API	Method	Function
<a href="#">Listing Objects (SDK for Java)</a>	obsClient.listObjects(ListObjectsRequest request)	Lists some or all objects in a bucket based on the specified prefix, object count, and start position and returns the objects in alphabetical order.
<a href="#">Deleting an Object (SDK for Java)</a>	obsClient.deleteObject(DeleteObjectRequest request)	Deletes an object from a bucket.
<a href="#">Batch Deleting Objects (SDK for Java)</a>	obsClient.deleteObjects(DeleteObjectsRequest deleteRequest)	Deletes objects from a bucket in a batch. (Deleted objects cannot be restored.)
<a href="#">Copying an Object (SDK for Java)</a>	obsClient.copyObject(CopyObjectRequest request)	Creates a copy up to 5 GB for an object.
<a href="#">Copying an Object - Multipart (SDK for Java)</a>	obsClient.copyPart(CopyPartRequest request)	Copies parts to a specified bucket based on the multipart upload ID returned in initiating a multipart upload.
<a href="#">Checking Whether an Object Exists (SDK for Java)</a>	doesObjectExist(final GetObjectMetadataRequest request)	Checks whether an object exists (HTTP status code <b>200</b> indicates the object exists, while <b>404</b> indicates the object or bucket does not exist).

## Temporarily Authorized Access APIs

[Table 2-3](#) lists the APIs related to temporarily authorized access.

**Table 2-3** Temporarily Authorized Access APIs

API	Method	Function
<a href="#">Accessing OBS Using a Signed URL (SDK for Java)</a>	obsClient.createTemporarySignature(TemporarySignatureRequest request)	Creates a signed URL and specifies the expiration time for the URL to grant visitors temporary access.  (To allow other users to perform a temporary operation such as upload, you need to generate a URL for the corresponding operation and offer that to users.)

## Versioning APIs

**Table 2-4** lists the APIs related to versioning.

**Table 2-4** Versioning APIs

API	Method	Function
<a href="#">Configuring Versioning for a Bucket (SDK for Java)</a>	obsClient.setBucketVersioning(final SetBucketVersioningRequest request)	Configures versioning for objects in a bucket.
<a href="#">Obtaining the Versioning Status of a Bucket (SDK for Java)</a>	obsClient.getBucketVersioning(final BaseBucketRequest request)	Returns the versioning status of a bucket.
<a href="#">Obtaining an Object Version (SDK for Java)</a>	obsClient.getObject(GetObjectRequest request)	Returns a specified object version.
<a href="#">Copying an Object Version (SDK for Java)</a>	obsClient.copyObject(CopyObjectRequest request)	Creates a copy up to 5 GB for a versioned object.
<a href="#">Restoring a Specific Archive Object Version (SDK for Java)</a>	obsClient.restoreObject(RestoreObjectRequest request)	Restores an Archive object version.  (To download an Archive object version, you need to restore it first.)

API	Method	Function
<a href="#">Listing Object Versions (SDK for Java)</a>	<code>obsClient.listVersions(ListVersionsRequest request)</code>	Lists some or all object versions in a bucket based on the specified prefix, version count, and start position and returns the versions in alphabetical order.
<a href="#">Setting an ACL for an Object Version (SDK for Java)</a>	<code>obsClient.setObjectAcl(SetObjectAclRequest request)</code>	Sets an ACL for an object version.
<a href="#">Obtaining the ACL of an Object Version (SDK for Java)</a>	<code>obsClient.getObjectAcl(GetObjectAclRequest request)</code>	Returns the ACL of an object version.
<a href="#">Deleting an Object Version (SDK for Java)</a>	<code>obsClient.deleteObject(DeleteObjectRequest request)</code>	Deletes the ACL of an object version.
<a href="#">Batch Deleting Object Versions (SDK for Java)</a>	<code>obsClient.deleteObjects(DeleteObjectsRequest deleteRequest)</code>	Deletes object versions from a bucket in a batch. (Deleted object versions cannot be restored.)

## Lifecycle Rule APIs

[Table 2-5](#) lists the APIs related to lifecycle rules.

**Table 2-5** Lifecycle Rule APIs

API	Method	Function
<a href="#">Setting Lifecycle Rules (SDK for Java)</a>	<code>obsClient.setBucketLifecycle(final SetBucketLifecycleRequest request)</code>	Sets a lifecycle rule for a bucket to periodically delete objects in the bucket or transition object storage classes.
<a href="#">Obtaining Lifecycle Rules (SDK for Java)</a>	<code>obsClient.getBucketLifecycle(final BaseBucketRequest request)</code>	Returns a lifecycle rule of a bucket.
<a href="#">Deleting Lifecycle Rules (SDK for Java)</a>	<code>obsClient.deleteBucketLifecycle(final BaseBucketRequest request)</code>	Deletes a lifecycle rule of a bucket.

## CORS rule APIs

[Table 2-6](#) lists the APIs related to CORS rules.

**Table 2-6** CORS rule APIs

API	Method	Function
<a href="#">Configuring a CORS Rule (SDK for Java)</a>	obsclient.setBucketCors(final SetBucketCorsRequest request)	Sets a CORS rule for a bucket (the existing rules will be overwritten by the new ones).
<a href="#">Obtaining a CORS Rule (SDK for Java)</a>	obsclient.getBucketCors(final BaseBucketRequest request)	Returns a CORS rule of a bucket.
<a href="#">Deleting a CORS Rule (SDK for Java)</a>	obsclient.deleteBucketCors(final BaseBucketRequest request)	Deletes a CORS rule of a bucket.

## Bucket Logging APIs

[Table 2-7](#) lists the logging APIs.

**Table 2-7** Bucket logging APIs

API	Method	Function
<a href="#">Configuring Logging for a Bucket (SDK for Java)</a>	obsClient.setBucketLogging(final SetBucketLoggingRequest request)	Enables logging for a source bucket, specifies a target bucket for storing log files, and configures the name prefixes and access permissions for log files.
<a href="#">Obtaining the Logging Configuration of a Bucket (SDK for Java)</a>	obsClient.getBucketLogging(final BaseBucketRequest request)	Returns the logging configuration of a bucket.

## Static Website Hosting APIs

[Table 2-8](#) lists the APIs related to static website hosting.

**Table 2-8** Static website hosting APIs

API	Method	Function
<a href="#">Hosting Website Files in a Bucket (SDK for Java)</a>	<ol style="list-style-type: none"> <li>obsClient.putObject(PutObjectRequest request)</li> <li>obsClient.setObjectAcl(SetObjectAclRequest acl)</li> </ol>	Uploads the files of a static website to a specified bucket in OBS, configures the public read permission for the files, and enables static website hosting for the bucket.
<a href="#">Configuring Static Website Hosting (SDK for Java)</a>	obsClient.setBucketWebsite(final SetBucketWebsiteRequest request)	Configures website hosting for a bucket.
<a href="#">Obtaining Static Website Hosting Configurations (SDK for Java)</a>	obsClient.getBucketWebsite(final BaseBucketRequest request)	Returns the website configuration of a bucket.
<a href="#">Deleting Static Website Hosting Configurations (SDK for Java)</a>	obsClient.deleteBucketWebsite(final BaseBucketRequest request)	Deletes the website configuration of a bucket.

## Tagging APIs

[Table 2-9](#) lists the APIs related to tagging.

**Table 2-9** Tagging APIs

API	Method	Function
<a href="#">Configuring Tags for a Bucket (SDK for Java)</a>	obsClient.setBucketTagging(final SetBucketTaggingRequest request)	Tags a bucket to facilitate CDR filtering and cost analysis.
<a href="#">Obtaining Bucket Tags (SDK for Java)</a>	obsClient.getBucketTagging(final BaseBucketRequest request)	Returns the tags of a bucket.
<a href="#">Deleting Bucket Tags (SDK for Java)</a>	obsClient.deleteBucketTagging(final BaseBucketRequest request)	Deletes the tags of a bucket.

# 3 Preparations (SDK for Java)

---

Before using OBS SDK for Java to access OBS, you need to prepare the service and development environments. To prepare the service environment, you will need an account and access keys. Both of them are necessary for interaction between OBS SDK and OBS. To ensure successful SDK installation and SDK-based code development and running, you should also set up a local development environment, for example, installing dependencies and development tools.

## Preparing a HUAWEI ID

To use OBS, you must have a HUAWEI ID. For details, see [Creating a HUAWEI ID and Enabling Huawei Cloud Services](#).

## Preparing Access Keys

Access keys consist of two parts: an access key ID (AK) and a secret access key (SK). OBS uses access keys to sign requests to make sure that only authorized accounts can access specified OBS resources. Programmatic access must be enabled for an IAM user before the IAM user can get access keys. To enable programmatic access, see [Viewing or Modifying IAM User Information](#). Access keys are explained as follows:

- One AK maps to only one user but one user can have multiple AKs. OBS authenticates users by their AKs.
- An SK is required for accessing OBS. Authentication information is generated based on the SK and request headers. AKs and SKs are in one-to-one match.

Access keys are permanent. There are also temporary security credentials (consisting of an AK/SK pair and a security token). Each user can create a maximum of two valid AK/SK pairs. Temporary security credentials can only be used to access OBS within the specified validity period. Once they expire, they must be requested again. For security purposes, you are advised to use temporary security credentials to access OBS. If you want to use permanent access keys, periodically update them. The following describes how to obtain access keys of these two types.

- To get permanent access keys, do as follows:
  - a. Log in to OBS Console.

- b. In the upper right corner, hover over the username and choose **My Credentials**.
- c. On the **My Credentials** page, click **Access Keys** in the navigation pane.
- d. On the **Access Keys** page, click **Create Access Key**.
- e. In the displayed dialog box, enter the login password and verification code.

 **NOTE**

- If you have not bound an email address or a mobile number yet, only the login password is required.
- If you have bound both an email address and a mobile number, you can use either of them for verification.

- f. Click **OK**.
- g. Click **Download**. The access key file is automatically saved to your browser's default download path.
- h. Open the downloaded **credentials.csv** file to obtain the AK and SK.

 **NOTE**

- Each user can create a maximum of two valid access key pairs.
  - Keep AKs and SKs properly to prevent information leakage. If you click **Cancel** in the download dialog box, the access keys will not be downloaded and cannot be downloaded later. You can create a new AK/SK pair if needed.
- To get temporary security credentials, refer to the following:

Temporary security credentials are issued by the system and are only valid for 15 minutes to 24 hours. They follow the principle of least privilege. When using temporary security credentials, you must use an AK/SK pair and a security token together.

To obtain them, see [Obtaining a Temporary AK/SK and a Security Token](#).

---

**NOTICE**

OBS is a global service. When obtaining temporary access keys, set the token scope to **domain** to apply the token to global services. Global services are not differentiated by any project or region.

---

## Setting Up a Development Environment

- Download a recommended JDK version from the [Oracle's official website](#) and install it. Recommended JDK versions: JDK 8 or later
- The latest version of Eclipse IDE for Java Developers is required and can be downloaded from the [Eclipse's official website](#).



# 4 SDK Download and Installation (SDK for Java)

---

## Downloading OBS SDK for Java

- Latest version of OBS Java SDK source code: [Download](#)
- Earlier version of OBS Java SDK: [Download](#)

## Installing OBS SDK for Java

You can use the methods listed in [Table 4-1](#) to install OBS SDK for Java.

**Table 4-1** Methods of installing OBS SDK for Java

No.	Method
1	<a href="#">Method 1: Using the Maven Central Repository and Maven Project</a>
2	<a href="#">Method 2: Using the Gradle Central Repository and Gradle Project</a>

## Method 1: Using the Maven Central Repository and Maven Project

Before using this method, ensure that the Java and Maven environments are correctly configured and can be used properly.

- Step 1** Access the Maven central repository to obtain the version number of OBS SDK for Java. You can either choose an [OBS Bundle SDK for Java](#) or a standard [OBS SDK for Java](#). No matter Bundle or standard SDKs, a latest version is recommended. Bundle SDK 3.23.9 is used here.

 NOTE

- Bundle SDKs share the same source code as standard SDKs. The difference is that in Bundle SDKs, all third-party dependencies are organized into the SDK and are added from the SDK path. This means Bundle SDKs are freed from potential external dependency conflicts but require a larger space (over 7 MB).
- If there is a dependency conflict when you use a standard SDK, resolve the issue by referring to [Resolving Dependency Missing or Conflicts \(SDK for Java\)](#).

**Step 2** Open the **pom.xml** file of the Maven project and add dependency configurations to **<dependencies>**.

If you choose to use a Bundle SDK, add the following configuration to **<dependencies>** and replace **bundleVersionNumber** with the SDK version number obtained in **Step 1**:

```
<dependency>
  <groupId>com.huaweicloud</groupId>
  <artifactId>esdk-obs-java-bundle</artifactId>
  <version>bundleVersionNumber</version>
</dependency>
```

In this example, the configurations shown below should be added for Bundle 3.23.9:

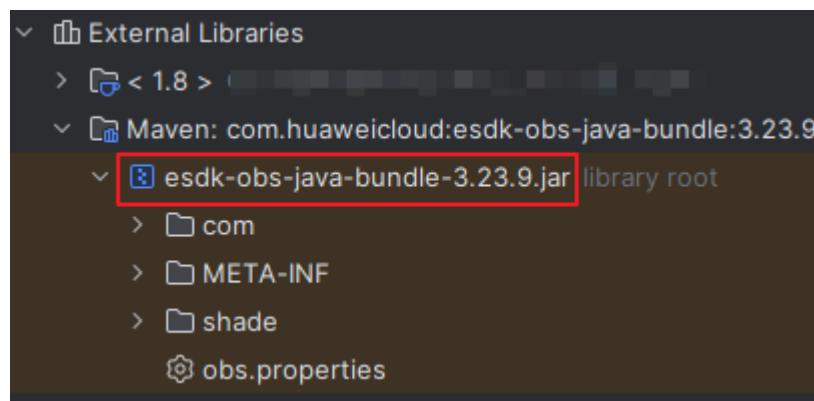
```
<dependency>
  <groupId>com.huaweicloud</groupId>
  <artifactId>esdk-obs-java-bundle</artifactId>
  <version>3.23.9</version>
</dependency>
```

If you choose to use a standard SDK, add the following configuration to **<dependencies>** and replace **VersionNumber** with the SDK version number obtained in **Step 1**:

```
<dependency>
  <groupId>com.huaweicloud</groupId>
  <artifactId>esdk-obs-java</artifactId>
  <version>versionNumber</version>
</dependency>
```

**Step 3** Click **Reload All Maven Projects** to refresh the Maven configuration.

**Step 4** Check whether the SDK is successfully installed. If a JAR package for Java SDK is downloaded to the dependency path, the SDK is installed. If no JAR package is generated, check whether the **pom.xml** file is correctly configured and the version number of SDK is correctly replaced. If the fault persists, [submit a service ticket](#).



----End

## Method 2: Using the Gradle Central Repository and Gradle Project

Before using this method, ensure that the Java and Gradle environments are correctly configured and can be used properly.

- Step 1** Obtain the version number of OBS SDK for Java. You can either choose an [OBS Bundle SDK for Java](#) or a standard [OBS SDK for Java](#). No matter Bundle or standard SDKs, a latest version is recommended. Bundle 3.23.9 is used here.

 **NOTE**

- Bundle SDKs share the same source code as standard SDKs. The difference is that in Bundle SDKs, all third-party dependencies are organized into the SDK and are added from the SDK path. This means Bundle SDKs are freed from potential external dependency conflicts but require a larger space (over 7 MB).
- If there is a dependency conflict when you use a standard SDK, resolve the issue by referring to [Resolving Dependency Missing or Conflicts \(SDK for Java\)](#).

- Step 2** Open the **build.gradle** file of the Gradle project and add the dependency configurations to **dependencies**.

If you choose to use a Bundle SDK, add the following configuration to **<dependencies>** and replace **bundleVersionNumber** with the SDK version number obtained in [Step 1](#):

```
api 'com.huaweicloud:esdk-obs-java-bundle:bundleVersionNumber'
```

In this example, the configurations shown below should be added for Bundle 3.23.9:

```
api 'com.huaweicloud:esdk-obs-java-bundle:3.23.9'
```

If you choose to use a standard SDK, add the following configurations to **<dependencies>** and replace **VersionNumber** with the SDK version number obtained in [Step 1](#):

```
api 'com.huaweicloud:esdk-obs-java:versionNumber'
```

- Step 3** Click **Reload All Gradle Projects** to refresh the Gradle configuration.

- Step 4** Check whether the SDK is successfully installed. If a JAR package for Java SDK is downloaded to the dependency path, the SDK is installed. If no JAR package is generated, check whether the **build.gradle** file is correctly configured and the version number of SDK is correctly replaced. If the fault persists, [submit a service ticket](#).

----End

# 5 Getting Started (SDK for Java)

This section introduces how to use OBS SDK for Java to perform some basic actions, such as creating a bucket, and uploading, downloading, listing, and deleting objects.

## Preparations

Ensure you have made the following preparations before using the SDK:

1. [Before You Start \(SDK for Java\)](#): Select a proper SDK version.
2. [Preparations \(SDK for Java\)](#): Prepare the service and development environments.
3. [SDK Download and Installation \(SDK for Java\)](#): Download and install the OBS SDK for Java.

## Creating a Bucket

The example below shows how to create a bucket named **examplebucket**, and configure access, storage class, region, and redundancy type for the bucket. For more details about how to create a bucket, see [Creating a Bucket \(SDK for Java\)](#).

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.AvailableZoneEnum;
import com.obs.services.model.CreateBucketRequest;
import com.obs.services.model.ObsBucket;
import com.obs.services.model.StorageClassEnum;

public class CreateBucket001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");

        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
```

```
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    CreateBucketRequest request = new CreateBucketRequest();
    // Example bucket name
    String exampleBucket = "examplebucket";
    // Example bucket location
    String exampleLocation = "eu-west-101";
    request.setBucketName(exampleBucket);
    // Set the bucket ACL to private (the default value).
    request.setAcl(AccessControlList.REST_CANNED_PRIVATE);
    // Set the bucket storage class to Standard.
    request.setBucketStorageClass(StorageClassEnum.STANDARD);
    // Set the bucket location (EU-Dublin is used as an example). location must match the endpoint.
    request.setLocation(exampleLocation);
    // Specify the multi-AZ redundancy for the bucket. If this parameter is not configured, a single-AZ
bucket will be created.
    request.setAvailableZone(AvailableZoneEnum.MULTI_AZ);
    // Create a bucket.
    ObsBucket bucket = obsClient.createBucket(request);
    // The bucket is created.
    System.out.println("CreateBucket successfully");
    System.out.println("RequestId:" + bucket.getRequestId());

} catch (ObsException e) {
    System.out.println("CreateBucket failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code: " + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message: " + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("CreateBucket failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Uploading an Object

The example below shows how to upload two local files **localfile** and **localfile2** to the bucket **examplebucket**, and specify the names of the objects created as **objectkey** and **objectkey2** respectively. For more details about uploading an object, see [Object Upload \(SDK for Java\)](#).

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class PutObject004 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
```

```
hard coding may result in leakage.
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
// Upload files.
// localfile indicates the path of the local file to be uploaded, in which the file name must be
specified.
PutObjectRequest request = new PutObjectRequest();
request.setBucketName("examplebucket");
request.setObjectKey("objectkey");
request.setFile(new File("localfile"));
obsClient.putObject(request);
System.out.println("putObject successfully");
} catch (ObsException e) {
System.out.println("putObject failed");
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
System.out.println("putObject failed");
// Print other error information.
e.printStackTrace();
}
}
}
```

## Downloading an Object

The example below shows how to download the object **objectname** from the bucket **examplebucket**. For more details about downloading an object, see [Object Download \(SDK for Java\)](#).

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObsObject;
import java.io.ByteArrayOutputStream;
import java.io.InputStream;
public class GetObject001 {
    public static void main(String[] args) {
// Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
```

```
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
// advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
// ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Specify the actual endpoint where the bucket is located. The endpoint for EU-Dublin is used here as
// an example. For guidance on how to view the endpoint of a bucket, see https://
// support.huaweicloud.com/eu/usermanual-obs/obs_03_0312.html.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
// Download the object using streaming.
ObsObject obsObject = obsClient.getObject("examplebucket", "objectname");
// Read the object content.
System.out.println("Object content:");
InputStream input = obsObject.getObjectContent();
byte[] b = new byte[1024];
ByteArrayOutputStream bos = new ByteArrayOutputStream();
int len;
while ((len = input.read(b)) != -1) {
bos.write(b, 0, len);
}
System.out.println("getObjectContent successfully");
System.out.println(new String(bos.toByteArray()));
bos.close();
input.close();
} catch (ObsException e) {
System.out.println("getObjectContent failed");
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
System.out.println("getObjectContent failed");
// Print other error information.
e.printStackTrace();
}
}
```

## Listing Objects

The example below shows how to list objects in the bucket **examplebucket**. For more details about object listing, see [Listing Objects \(SDK for Java\)](#).

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects001 {
public static void main(String[] args) {
// Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
// hard coding may result in leakage.
// Obtain an AK/SK pair on the management console.
```

```
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Listing objects.
    ObjectListing result = obsClient.listObjects("examplebucket");
    for (ObsObject obsObject : result.getObjects()) {
        System.out.println("listObjects successfully");
        System.out.println("ObjectKey:" + obsObject.getObjectKey());
        System.out.println("Owner:" + obsObject.getOwner());
    }
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMassage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Deleting an Object

The example below shows how to delete the object **objectname** from the bucket **examplebucket**. For more details about deleting an object, see [Deleting an Object \(SDK for Java\)](#).

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
```



with the one in your actual situation.

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Delete the object.
    obsClient.deleteObject("examplebucket", "objectname");
    System.out.println("deleteObject successfully");
} catch (ObsException e) {
    System.out.println("deleteObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMassage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Using an OBS Client

The example below shows how to use an ObsClient instance.

```
// Make sure there is only one ObsClient instance in the whole project.
// ObsClient is thread-safe and can be used in concurrency scenarios.
ObsClient obsClient = null;
try
{
    String endPoint = "https://your-endpoint";
    // Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your access keys
    and store them in the configuration file or environment variables. In this example, access keys are stored in
    environment variables for identity authentication. Before running the code in this example, configure
    environment variables ACCESS_KEY_ID and SECRET_ACCESS_KEY_ID.
    // Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
    String ak = System.getenv("ACCESS_KEY_ID");
    String sk = System.getenv("SECRET_ACCESS_KEY_ID");
    // Create an ObsClient instance.
    obsClient = new ObsClient(ak, sk, endPoint);
    // Call an API to perform an operation, for example, uploading an object.
    HeaderResponse response = obsClient.putObject("bucketname", "objectname", new File("localfile")); //
localfile indicates the path of the local file to be uploaded. Use the file path in your case.
    System.out.println(response);
}
catch (ObsException e)
{
    System.out.println("HTTP Code: " + e.getResponseCode());
    System.out.println("Error Code:" + e.getErrorCode());
    System.out.println("Error Message: " + e.getErrorMassage());

    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    Map<String, String> headers = e.getResponseHeaders();// Check all map entries and print all headers
```

```
with errors reported.
    if(headers != null){
        for (Map.Entry<String, String> header : headers.entrySet()) {
            if(header.getKey().contains("error")){
                System.out.println(header.getKey()+":"+header.getValue());
            }
        }
    }
    e.printStackTrace();
}finally{
    // Close the ObsClient instance. If the instance is used globally, skip this step.
    // After the ObsClient instance is closed by calling ObsClient.close, it cannot be used again.
    if(obsClient != null){
        try
        {
            // obsClient.close();
        }
        catch (IOException e)
        {
        }
    }
}
```

# 6 Initialization (SDK for Java)

## 6.1 Overview (SDK for Java)

After the SDK is installed, you need to create and configure an OBS client and configure the logging for the SDK to complete the initialization.

Table 6-1 Initialization

Task	Sub-task	Mandatory (Yes / No)	Description
Creating and Configuring an OBS Client (SDK for Java)	Creating an OBS client	Yes	OBS clients offer a series of APIs for you to use OBS SDK for Java to interact with OBS. Before sending a request to OBS, you need to create and initialize an OBS client (an ObsClient instance).
	Configuring access credentials	Yes	For security purposes, you need to configure access credentials for the client so that the server can verify the validity of requests.

Task	Sub-task	Mandatory (Yes / No)	Description
	Configuring the endpoint and other parameters	Yes for the endpoint; No for other parameters	<ul style="list-style-type: none"> <li>To quickly create and retrieve your resources, you need to configure an endpoint for the client so that the server can know where to create or retrieve resources.</li> <li>You can configure other parameters for the client based on your needs.</li> </ul>
<b>Configuring SDK Logging (SDK for Java)</b>	Configuring a log level	No	<p>OBS SDK for Java offers logging based on the open-source library of Apache Log4j 2. The Log4j 2 framework classifies log files into different levels based on their priorities. You can specify a log level to customize the log storage scope.</p> <p>By default, OBS SDK for Java saves log files of the WARN and higher levels to local directories.</p>
	Configuring a storage path for log files	No	Configure a local path to store logs.

## 6.2 Creating and Configuring an OBS Client (SDK for Java)

### Scenarios

This section describes how to create and configure an OBS client. If you already have a client, skip this section and obtain the API details by referring to [API Overview \(SDK for Java\)](#).

### Prerequisites

Ensure you have completed the following preparations:

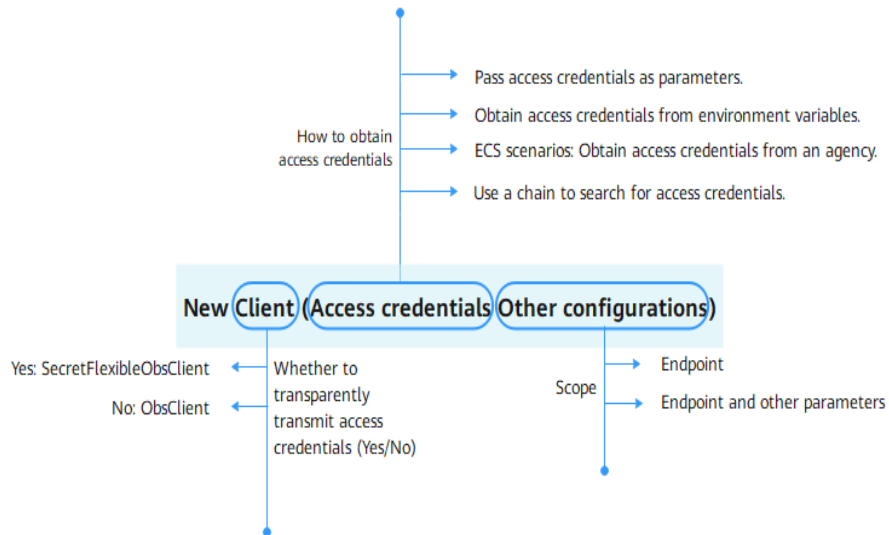
1. Select a proper SDK version by referring to [Before You Start \(SDK for Java\)](#).
2. Prepare the service and development environments by referring to [Preparations \(SDK for Java\)](#).
3. Download and install the OBS SDK for Java by referring to [SDK Download and Installation \(SDK for Java\)](#).

### Important Notes

- Make sure to configure the client at the time you create it. After the client is created, you will not be able to configure it.
- If you use a temporary AK/SK pair, you can call `ObsClient.refresh("yourAccessKey", "yourSecretKey", "yourSecurityToken")` to refresh to keep the pair valid, without the need to create a new ObsClient instance.
- You are advised to create an ObsClient instance at the initialization and use it for the whole project. Creating multiple clients affects high-concurrency performance.
- ObsClient is thread-safe and can be used in concurrency scenarios.
- If a client is closed by calling `ObsClient.close`, it cannot be used again. To ensure the whole project uses only one client, you are advised not to proactively close the client.

## Overview

**Figure 6-1** Creating and configuring a client



You can select a client class, a method of obtaining access credentials, and other parameters by referring to [Figure 6-1](#).

**Table 6-2** Creating and configuring an OBS client

Category	Option	Description	Sample Code
Client	Client that does not transparently transmit access credentials	If you want to configure access credentials only once and use them for all API calls, use <b>ObsClient</b> .	<b>ObsClient</b>
	Client that transparently transmits access credentials	If you need to configure access credentials for each API call, use <b>SecretFlexibleObsClient</b> , which is inherited from <b>ObsClient</b> .	<b>SecretFlexibleObsClient</b>
Access credentials	Passing access credentials as parameters	Create an ObsClient instance and pass access credentials as parameters.	<ul style="list-style-type: none"> <li><b>Passing Access Credentials as Parameters</b></li> <li><b>BasicObsCredentialsProvider</b></li> </ul>

Category	Option	Description	Sample Code
	Obtaining access credentials from environment variables	Create an <code>ObsClient</code> instance and use <code>EnvironmentVariableObsCredentialsProvider</code> to obtain access credentials from environment variables.	<a href="#">EnvironmentVariableObsCredentialsProvider</a>
	Obtaining access credentials from an agency in ECS scenarios	<p>Create an <code>ObsClient</code> instance and use <code>EcsObsCredentialsProvider</code> to automatically obtain temporary access credentials from the ECS. The access credentials are periodically updated automatically.</p> <p><b>NOTICE</b></p> <ol style="list-style-type: none"> <li>1. To use <code>EcsObsCredentialsProvider</code>, ensure that the application runs on an ECS that has an IAM agency with OBS permissions.</li> <li>2. Ensure that the server and the environment where the application is deployed have the same UTC time, or temporary access keys may fail to be updated in a timely manner.</li> <li>3. In this method, the SDK calls an API of the fixed IP address (<b>169.254.169.254</b>) to obtain a temporary AK/SK pair. For details, see <a href="#">Obtaining Security Keys from an ECS</a>.</li> </ol>	<a href="#">EnvironmentVariableObsCredentialsProvider</a>
	Using a chain to search for access credentials	<p>You can use this method to search for access keys in a chain in a predefined sequence. The first pair of access keys obtained is used to create an <code>ObsClient</code> instance.</p> <p>By default, environment variables are checked first and then the ECS agencies are checked to obtain access credentials. You cannot customize the search method or sequence.</p>	<a href="#">OBSCredentialsProviderChain</a>

Cat eg ory	Option	Description	Sample Code
Ot her conf igu rati ons	Configuring only the endpoint	Other than access credentials, only the endpoint is configured.	<a href="#">Configuring Only the Endpoint</a>
	Configuring the endpoint and other parameters	In addition to the endpoint, you need to configure the HTTP proxy, Socket timeout, and other parameters. You can use the <b>ObsConfiguration</b> class to configure the ObsClient instance. For details about the supported parameters, see <a href="#">Table 6-3</a> .	<a href="#">ObsConfiguration</a>

## Code Examples

- **Using the client class that does not transparently transmit access credentials to directly configure access credentials and configuring the endpoint**

- Using permanent access keys (AKs/SKs)

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.

String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your
// access keys and store them in the configuration file or environment variables. In this example,
// access keys are stored in the environment variables for identity authentication. Before running
// the code in this example, configure environment variables ACCESS_KEY_ID and
// SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// Create an ObsClient instance.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);

// Use the instance to access OBS.

// Close the instance.
obsClient.close();
```

- Using temporary access credentials (AKs/SKs and security tokens)

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.

String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your
// access keys and store them in the configuration file or environment variables. In this example,
// access keys are stored in the environment variables for identity authentication. Before running
// the code in this example, configure environment variables ACCESS_KEY_ID and
// SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
String securityToken = System.getenv("SECRET_TOKEN");
// Create an ObsClient instance.
ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
```



```
// Use the instance to access OBS.
```

```
// Close the instance.  
obsClient.close();
```

#### – BasicObsCredentialsProvider

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";  
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your  
// access keys and store them in the configuration file or environment variables. In this example,  
// access keys are stored in the environment variables for identity authentication. Before running  
// the code in this example, configure environment variables ACCESS_KEY_ID and  
SECRET_ACCESS_KEY_ID.
```

```
// Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
```

```
String ak = System.getenv("ACCESS_KEY_ID");  
String sk = System.getenv("SECRET_ACCESS_KEY_ID");  
// Create an ObsClient instance.  
ObsClient obsClient = new ObsClient(new BasicObsCredentialsProvider(ak, sk), endPoint);
```

```
// Use the instance to access OBS.
```

```
// Close the instance.  
obsClient.close();
```

#### • Using the SecretFlexibleObsClient client class that transparently transmits access credentials

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";  
// Create an instance of the ObsConfiguration class.  
ObsConfiguration config = new ObsConfiguration();  
config.setEndPoint(endPoint);
```

```
// Create an instance of SecretFlexibleObsClient.
```

```
SecretFlexibleObsClient obsClient = new SecretFlexibleObsClient(config);  
// Use the instance of SecretFlexibleObsClient to access OBS.
```

```
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your access  
// keys and store them in the configuration file or environment variables. In this example, access keys  
// are stored in the environment variables for identity authentication. Before running the code in this  
// example, configure environment variables ACCESS_KEY_ID and SECRET_ACCESS_KEY_ID.
```

```
// Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
```

```
String ak1 = System.getenv("ACCESS_KEY_ID");  
String sk1 = System.getenv("SECRET_ACCESS_KEY_ID");  
obsClient.listBuckets(ak1, sk1);
```

```
String ak2 = System.getenv("ACCESS_KEY_ID");  
String sk2 = System.getenv("SECRET_ACCESS_KEY_ID");  
obsClient.listBuckets(ak2, sk2);
```

```
// Close the instance.  
obsClient.close();
```

#### • Using EnvironmentVariableObsCredentialsProvider to obtain access credentials from environment variables

In this method, you need to define **OBS\_ACCESS\_KEY\_ID** and **OBS\_SECRET\_ACCESS\_KEY** in the environment variables to represent the permanent AK and SK respectively.

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";  
// Create an ObsClient instance.  
ObsClient obsClient = new ObsClient(new EnvironmentVariableObsCredentialsProvider(), endPoint);
```

```
// Use the instance to access OBS.
```

```
// Close the instance.  
obsClient.close();
```

- **Using EcsObsCredentialsProvider to obtain access credentials from an agency in the ECS scenarios**

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";  
// Create an ObsClient instance.  
ObsClient obsClient = new ObsClient(new EcsObsCredentialsProvider(), endPoint);
```

```
// Use the instance to access OBS.
```

```
// Close the instance.  
obsClient.close();
```

- **Using OBSCredentialsProviderChain to obtain access credentials from a chain**

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";  
// Create an ObsClient instance.  
ObsClient obsClient = new ObsClient(new OBSCredentialsProviderChain(), endPoint);
```

```
// Use the instance to access OBS.
```

```
// Close the instance.  
obsClient.close();
```

- **Using ObsConfiguration to configure parameters for the client**

- **KeyManagerFactory:** By configuring **KeyManagerFactory**, you can save a certificate on your local PC and check whether the certificate returned by the server is correct.

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";  
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your  
access keys and store them in the configuration file or environment variables. In this example,  
access keys are stored in the environment variables for identity authentication. Before running  
the code in this example, configure environment variables ACCESS_KEY_ID and  
SECRET_ACCESS_KEY_ID.
```

```
// Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.  
String ak = System.getenv("ACCESS_KEY_ID");  
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
```

```
String jksPassword = "you-jks-password";  
String jksPath = "/path/to/your/keystore/file";  
KeyStore ks = KeyStore.getInstance("JKS");  
char[] passArray = jksPassword.toCharArray();  
FileInputStream inputStream = new FileInputStream(jksPath);  
ks.load(inputStream, passArray);  
KeyManagerFactory kmf =  
KeyManagerFactory.getInstance(KeyManagerFactory.getDefaultAlgorithm());  
kmf.init(ks, passArray);
```

```
String trustJKSPassword = "you-trustJKS-password";  
String trustJKSPath = "/path/to/your/trustKeyStore/file";  
KeyStore trustKeyStore = KeyStore.getInstance("JKS");  
char[] trustPassArray = trustJKSPassword.toCharArray();  
FileInputStream trustInputStream = new FileInputStream(trustJKSPath);  
trustKeyStore.load(trustInputStream, trustPassArray);  
TrustManagerFactory tmf =
```

```
TrustManagerFactory.getInstance(TrustManagerFactory.getDefaultAlgorithm());
tmf.init(trustKeyStore);

ObsConfiguration config = new ObsConfiguration();
config.setEndPoint(endPoint);
config.setKeyManagerFactory(kmf);
config.setTrustManagerFactory(tmf);

ObsClient obsClient = new ObsClient(ak, sk, config);
```

#### NOTE

The local certificate must be stored as a .jks file. You can run the following command to call the Java keytool to convert a .cer certificate into a .jks one:

```
keytool -import -file your-cer-file.cer -keystore your-keystore-file.jks
```

- HTTP proxy: After the HTTP proxy is configured, the SDK uses the proxy to access the server.

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.

String endPoint = "https://obs.eu-west-101.myhuaweicloud.com";
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your
access keys and store them in the configuration file or environment variables. In this example,
access keys are stored in the environment variables for identity authentication. Before running
the code in this example, configure environment variables ACCESS_KEY_ID and
SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://
support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");

String proxyUrl = "proxy.com";
int proxyPort = 8080;
String proxyUser = "userName";
String proxyPassword = "password";
ObsConfiguration config = new ObsConfiguration();
config.setEndPoint(endPoint);
config.setHttpProxy(proxyUrl, proxyPort, proxyUser, proxyPassword);
ObsClient obsClient = new ObsClient(ak, sk, config);
```

## Configuring a User-Defined Domain Name to Access OBS

To learn how to configure a user-defined domain name, see [Configuring a User-Defined Domain Name](#).

```
// Specify the user-defined domain name that has been configured on the console.
String endPoint = "http://your-domain";
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your access keys
and store them in the configuration file or environment variables. In this example, access keys are stored in
the environment variables for identity authentication. Before running the code in this example, configure
environment variables ACCESS_KEY_ID and SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://
support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");

// Create an instance of the ObsConfiguration class.
ObsConfiguration config = new ObsConfiguration();
config.setEndPoint(endPoint);
config.setCname(true);

// Create an ObsClient instance.
ObsClient obsClient = new ObsClient(ak, sk, config);

// Create an instance of ObsClient using Provider.
// ObsClient obsClient = new ObsClient(new EnvironmentVariableObsCredentialsProvider(), config);
// ObsClient obsClient = new ObsClient(new EcsObsCredentialsProvider(), config);
```

```
// Use the instance to access OBS.

// Close the instance.
obsClient.close();
```

## ObsConfiguration Parameters

### NOTE

- If the network bandwidth is sufficient, you can tune the **socketWriteBufferSize**, **socketReadBufferSize**, **readBufferSize**, and **writeBufferSize** parameters to improve upload and download performance.
- If the network condition is poor, you are advised to increase the values of **connectionTimeout** and **socketTimeout**.

**Table 6-3** ObsConfiguration parameters

Parameter	Description	Method	Recommended Value
connectionTimeout	<b>Explanation:</b> The amount of time to wait when initially establishing an HTTP/HTTPS connection before giving up and timing out. <b>Default value:</b> <b>60000</b> , in milliseconds.	ObsConfiguration.setConnectionTimeout	[10000, 60000]
socketTimeout	<b>Explanation:</b> The amount of time to wait for data to be transferred by the socket layer before the transfer times out. <b>Default value:</b> <b>60000</b> , in milliseconds.	ObsConfiguration.setSocketTimeout	[10000, 60000]
idleConnectionTime	<b>Explanation:</b> If the idle time of a connection exceeds the value of this parameter, the connection is closed. <b>Default value:</b> <b>30000</b> , in milliseconds.	ObsConfiguration.setIdleConnectionTime	Configure this parameter based on your needs.
maxIdleConnections	<b>Explanation:</b> The allowed maximum number of pooled idle connections. <b>Default value:</b> <b>1000</b>	ObsConfiguration.setMaxIdleConnections	Configure this parameter based on your needs.

Parameter	Description	Method	Recommended Value
maxConnections	<p><b>Explanation:</b> The allowed maximum number of concurrent HTTP requests.</p> <p><b>Default value:</b> <b>1000</b></p>	ObsConfiguration.setMaxConnections	Default
maxErrorRetry	<p><b>Explanation:</b> The allowed maximum number of retry attempts for failed requests (for example, request exceptions, or <b>500</b> or <b>503</b> error responses from the server).</p> <p><b>Restrictions:</b> For object upload and download APIs, if an exception occurs when the data flow is being processed, the upload or download will not be retried.</p> <p><b>Default value:</b> <b>3</b></p>	ObsConfiguration.setMaxErrorRetry	[0, 5]
endPoint	<p><b>Explanation:</b> OBS server address. It consists of a protocol type, domain name, and port number, for example, <b>https://your-endpoint:443</b>. For security purposes, you are advised to use HTTPS.</p> <p><b>Restrictions:</b> Given the performance of DNS and reliability of OBS, you must set <b>endPoint</b> to a domain name, rather than an IP address.</p> <p><b>Default value:</b> None</p>	ObsConfiguration.setEndPoint	Configure this parameter based on your needs.
httpProxy	<p><b>Explanation:</b> HTTP proxy configuration.</p> <p><b>Default value:</b> This parameter is left blank by default.</p>	ObsConfiguration.setHttpProxy	Configure this parameter based on your needs.

Parameter	Description	Method	Recommended Value
validateCertificate	<p><b>Explanation:</b> Whether to verify the server certificate.</p> <p><b>Value range:</b> <b>true:</b> The server certificate is verified. <b>false:</b> The server certificate is not verified.</p> <p><b>Default value:</b> <b>false</b></p>	ObsConfiguration.setValidateCertificate	Configure this parameter based on your needs.
verifyResponseContentType	<p><b>Explanation:</b> Whether to verify the <b>ContentType</b> header in the response.</p> <p><b>Value range:</b> <b>true:</b> The <b>ContentType</b> header is verified. <b>false:</b> The <b>ContentType</b> header is not verified.</p> <p><b>Default value:</b> true</p>	ObsConfiguration.setVerifyResponseContentType	Default
readBufferSize	<p><b>Explanation:</b> Size of the buffer used for downloading objects from socket streams. The value <b>-1</b> indicates that no buffer is configured.</p> <p><b>Default value:</b> <b>-1</b>, in bytes.</p>	ObsConfiguration.setReadBufferSize	Configure this parameter based on your needs.
writeBufferSize	<p><b>Explanation:</b> Size of the buffer used for uploading objects to socket streams. The value <b>-1</b> indicates that no buffer is configured.</p> <p><b>Default value:</b> <b>-1</b>, in bytes.</p>	ObsConfiguration.setWriteBufferSize	Configure this parameter based on your needs.

Parameter	Description	Method	Recommended Value
socketWriteBufferSize	<p><b>Explanation:</b> Size of the sending buffer of the socket. This parameter corresponds to <b>java.net.SocketOptions.SO_SNDBUF</b>.</p> <p><b>Default value:</b> -1, in bytes, indicating that this parameter is not configured.</p>	ObsConfiguration.setSocketWriteBufferSize	Default
socketReadBufferSize	<p><b>Explanation:</b> Size of the receiving buffer of the socket. This parameter corresponds to <b>java.net.SocketOptions.SO_RCVBUF</b>.</p> <p><b>Default value:</b> -1, in bytes, indicating that this parameter is not configured.</p>	ObsConfiguration.setSocketReadBufferSize	Default
keyManagerFactory	<p><b>Explanation:</b> Factory used for generating <b>javax.net.ssl.KeyManager</b>.</p> <p><b>Default value:</b> This parameter is left blank by default.</p>	ObsConfiguration.setKeyManagerFactory	Configure this parameter based on your needs.
trustManagerFactory	<p><b>Explanation:</b> Factory used for generating <b>javax.net.ssl.TrustManager</b>.</p> <p><b>Default value:</b> This parameter is left blank by default.</p>	ObsConfiguration.setTrustManagerFactory	Configure this parameter based on your needs.

Parameter	Description	Method	Recommended Value
isStrictHostnameVerification	<p><b>Explanation:</b> Whether to strictly verify the server-side host name. If this parameter is set to <b>true</b>, <b>javax.net.ssl.HttpURLConnection.setDefaultHostnameVerifier</b> needs to be used to create an object as an implementation of <b>javax.net.ssl.HostnameVerifier</b> to verify the host name.</p> <p><b>Value range:</b> <b>true:</b> The host name of the server is strictly verified. <b>false:</b> The host name of the server is not strictly verified.</p> <p><b>Default value:</b> <b>false</b></p>	ObsConfiguration.setIsStrictHostnameVerification	Configure this parameter based on your needs.
keepAlive	<p><b>Explanation:</b> Whether to use persistent connections to access OBS.</p> <p><b>Value range:</b> <b>true:</b> Persistent connections are used. <b>false:</b> Persistent connections are not used.</p> <p><b>Default value:</b> true</p>	ObsConfiguration.setKeepAlive	Configure this parameter based on your needs.
cname	<p><b>Explanation:</b> Whether to use a user-defined domain name to access OBS.</p> <p><b>Value range:</b> <b>true:</b> A user-defined domain name is used. <b>false:</b> A user-defined domain name is not used.</p> <p><b>Default value:</b> <b>false</b></p>	ObsConfiguration.setCname	Configure this parameter based on your needs.



Parameter	Description	Method	Recommended Value
sslProvider	<p><b>Explanation:</b> Provider of the SSLContext.</p> <p><b>Default value:</b> The SSLContext provided by the JDK is used.</p>	ObsConfiguration.setSslProvider	Configure this parameter based on your needs.
httpProtocolType	<p><b>Explanation:</b> HTTP protocol type used for accessing the OBS server.</p> <p><b>Default value:</b> HTTP1.1</p> <p><b>NOTE</b> If the value of <b>endPoint</b> does not contain any protocol, HTTPS is used by default.</p>	ObsConfiguration.setHttpProtocolType	Configure this parameter based on your needs.
httpDispatcher	<p><b>Explanation:</b> User-defined dispatcher.</p> <p><b>Default value:</b> None</p>	ObsConfiguration.setHttpDispatcher	Configure this parameter based on your needs.

Parameter	Description	Method	Recommended Value
secureRandom	<p><b>Explanation:</b> User-defined random number generator.</p> <p><b>Default value:</b> <b>new SecureRandom()</b></p> <p><b>NOTE</b></p> <ul style="list-style-type: none"> <li>On some platforms, the implementation of <b>new SecureRandom()</b> may be insecure. For security purposes, you are advised to use <b>ObsConfiguration.setSecureRandom()</b> to get a <b>SecureRandom</b> instance from a true random seed.</li> <li>If an operating system does not have sufficient entropy to generate random numbers (for example, when the system is just started), <b>SecureRandom</b> that generates true random numbers may be blocked until there is enough entropy available. To address this issue, you can take measures (such as using haveged in Linux) to supplement entropy.</li> </ul>	ObsConfiguration.setSecureRandom	Configure this parameter based on your needs.

## 6.3 Configuring SDK Logging (SDK for Java)

OBS SDK for Java offers logging based on the open-source Apache Log4j 2 library. By default, the SDK stores WARN log files to the directory specified by the JDK system variable **user.dir**. You can modify the log configuration file based on your needs.

### Procedure

- Step 1** Obtain the file **log4j2.xml** from the OBS SDK for Java package.
- Step 2** Modify the log level and storage path in the file as required.
- Step 3** Save the file to the **classpath** root directory, or call **Log4j2Configurator.setLogConfig** to specify the storage path of the file.

----End

 NOTE

- For details about SDK logging, see [Log Analysis \(SDK for Java\)](#).
- You can modify the **log4j2.xml** file to configure access permissions for log files.

# 7 Buckets (SDK for Java)

---

## 7.1 Creating a Bucket (SDK for Java)

### Function

This API creates an OBS bucket. Buckets are containers for storing objects (files uploaded to OBS) in OBS.

When creating a bucket, you can also configure parameters such as the storage class, region, and access control as needed.

### Restrictions

- To create a bucket, you must have the **obs:bucket:CreateBucket** permission. IAM is recommended for granting permissions. For details, see [IAM Custom Policies](#).
- When creating a bucket, if you use the endpoint **obs.myhuaweicloud.eu** for client initialization, you do not have to specify a region (indicated by **location**) where the bucket will be created, because OBS automatically creates the bucket in the EU-Dublin (eu-west-101) region. However, if the endpoint you use is not **obs.myhuaweicloud.eu**, you must specify a region that matches the used endpoint, or status code **400** is returned.

For example, if the endpoint used for initialization is **obs.eu-west-101.myhuaweicloud.eu**, you must set **Location** to **eu-west-101** when creating a bucket.

- A maximum of 100 buckets and parallel file systems in total can be created globally for an account. There is no limit on the number or size of objects stored in a bucket.
- The created bucket name must be unique in OBS. If you repeatedly create buckets with the same name in the same region, an HTTP status code **200** will be returned. In other cases, creating a bucket with an existing bucket name will have an HTTP status code **409** returned, indicating that such a bucket already exists.
- The name of a deleted bucket can be reused for another bucket or a parallel file system at least 30 minutes after the deletion.

- Not all regions support the creation of multi-AZ buckets. You can check whether a region allows you to create multi-AZ buckets by referring to [Product Pricing Details](#).

## Method

- Method 1: Create a bucket with a specified name.  
`createBucket(String bucketName)`
- Method 2: Create a bucket with a specified name in a specified region.  
`createBucket(String bucketName, String location)`
- Method 3: Create a bucket with a specified name in a specified region.  
`createBucket(ObsBucket bucket)`
- Method 4: Create a bucket and configure access permissions, storage class, location, cluster type, bucket type (object bucket or parallel file system), enterprise project ID, and extension permissions for the bucket.  
`createBucket(CreateBucketRequest request)`

## Request Parameters

**Table 7-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">CreateBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters for creating a bucket. For details, see <a href="#">Table 7-2</a> .

**Table 7-2** CreateBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
location	String	Yes if the region where the OBS service resides is not the default region	<p><b>Explanation:</b> Region where a bucket will be located</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An access control list (ACL) that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 7-3</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 7-5</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Bucket storage class that can be specified at bucket creation.</p> <p><b>Value range:</b> See <a href="#">Table 7-12</a>.</p> <p><b>Default value:</b> STANDARD</p>
extensionPermissionMap	Map< <a href="#">ExtensionBucketPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionBucketPermissionEnum</a> specifies the permissions to grant, and <a href="#">Set&lt;String&gt;</a> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 7-4</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
epid	String	No	<p><b>Explanation:</b> Enterprise project ID that can be specified at bucket creation. If you have enabled Enterprise Project Management Service (EPS), you can obtain the project ID from the EPS console.</p> <p><b>Restrictions:</b> The value of <b>epid</b> is a Universally Unique Identifier (UUID). <b>epid</b> is not required if you have not enabled EPS yet.</p> <p>Example: <b>9892d768-2d13-450f-aac7-ed0e44c2585f</b></p> <p><b>Default value:</b> None</p>
availableZone	<a href="#">AvailableZoneEnum</a>	No	<p><b>Explanation:</b> Data redundancy type that can be specified at bucket creation.</p> <p><b>Restrictions:</b> Multi-AZ redundancy does not support Archive storage. If the region where the bucket is located does not support multi-AZ storage, the bucket adopts single-AZ storage by default.</p> <p><b>Value range:</b> To configure multi-AZ storage for the bucket, set this parameter to <b>MULTI_AZ</b>. To configure single-AZ storage (default value assigned by OBS) for the bucket, you do not need to specify this parameter.</p> <p><b>Default value:</b> If this parameter is left blank, single AZ is used by default.</p>



**Table 7-3** ACL

Constant	Description
AccessControllist.REST_CAN_NED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControllist.REST_CAN_NED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CAN_NED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CAN_NED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControllist.REST_CAN_NED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 7-4** ExtensionBucketPermissionEnum

Constant	Description
GRANT_READ	Grants the <b>READ</b> permission to an account ID.  The account with the <b>READ</b> permission can list objects, multipart uploads, and object versions in the bucket you are creating, and can obtain bucket metadata.
GRANT_WRITE	Grants the <b>WRITE</b> permission to an account ID.  The account with the <b>WRITE</b> permission can create, delete, and overwrite objects in the bucket you are creating, and can initiate or abort multipart uploads, as well as upload, copy, and assemble parts.
GRANT_READ_ACP	Grants the <b>READ_ACP</b> permission to an account ID.  The account with the <b>READ_ACP</b> permission can read the ACL of the bucket you are creating.
GRANT_WRITE_ACP	Grants the <b>WRITE_ACP</b> permission to an account ID.  The account with the <b>WRITE_ACP</b> permission can modify the ACL of the bucket you are creating.
GRANT_FULL_CONTROL	Grants the <b>FULL_CONTROL</b> permission to an account ID.  The account with the <b>FULL_CONTROL</b> permission can perform any operation on the bucket you are creating.
GRANT_READ_DELIVERED	Grants the <b>READ</b> permission to an account ID. By default, this <b>READ</b> permission applies to all objects in the bucket.
GRANT_FULL_CONTROL_DELIVERED	Grants the <b>FULL_CONTROL</b> permission to an account ID. By default, this <b>FULL_CONTROL</b> permission applies to all objects in the bucket.

**Table 7-5** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	<a href="#">Owner</a>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-6</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 7-7</a> .

**Table 7-6** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 7-7** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 7-8</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> For details, see <a href="#">Table 7-11</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 7-8** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 7-9</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> For details, see <a href="#">Table 7-10</a> . <b>Default value:</b> None

**Table 7-9** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 7-10** GroupGrantee

Constant	Description
ALL_USERS	All users.

Constant	Description
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 7-11** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>

Constant	Default Value	Description
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 7-12** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 7-13** AvailableZoneEnum

Constant	Default Value	Description
MULTI_AZ	3az	Multi-AZ redundancy

## Responses

**Table 7-14** ObsBucket

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None



Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
owner	<b>Owner</b>	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-6</a>.</p>
creationDate	java.util.Date	<p><b>Explanation:</b> Time when the bucket was created.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
location	String	<p><b>Explanation:</b> Region where a bucket will be located</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>
storageClass	<a href="#">StorageClass Enum</a>	<p><b>Explanation:</b> Bucket storage class that can be specified at bucket creation.</p> <p><b>Value range:</b> See <a href="#">Table 7-12</a>.</p> <p><b>Default value:</b> <b>STANDARD</b></p>
acl	<a href="#">AccessControlList</a>	<p><b>Explanation:</b> An access control list (ACL) that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 7-3</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 7-5</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

## Code Example: Creating a Bucket with Complex Configurations

This example creates a bucket and configures its ACL, storage class, and region.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.AvailableZoneEnum;
import com.obs.services.model.CreateBucketRequest;
```

```
import com.obs.services.model.ObsBucket;
import com.obs.services.model.StorageClassEnum;

public class CreateBucket001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");

        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            CreateBucketRequest request = new CreateBucketRequest();
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Example bucket location
            String exampleLocation = "eu-west-101";
            request.setBucketName(exampleBucket);
            // Set the bucket ACL to private (the default value).
            request.setAcl(AccessControlList.REST_CANNED_PRIVATE);
            // Set the bucket storage class to Standard.
            request.setBucketStorageClass(StorageClassEnum.STANDARD);
            // Set the bucket location (EU-Dublin is used as an example). location must match the endpoint.
            request.setLocation(exampleLocation);
            // Specify the multi-AZ redundancy for the bucket. If this parameter is not configured, a single-AZ
            // bucket will be created.
            request.setAvailableZone(AvailableZoneEnum.MULTI_AZ);
            // Create a bucket.
            ObsBucket bucket = obsClient.createBucket(request);
            // The bucket is created.
            System.out.println("CreateBucket successfully");
            System.out.println("RequestId:" + bucket.getRequestId());

        } catch (ObsException e) {
            System.out.println("CreateBucket failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code: " + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message: " + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
        } catch (Exception e) {
            System.out.println("CreateBucket failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

```
}  
}
```

## Code Example: Creating a Bucket with Simple Configurations

This example creates a bucket and specifies its name and endpoint.

```
import com.obs.services.ObsClient;  
import com.obs.services.exception.ObsException;  
import com.obs.services.model.ObsBucket;  
  
public class CreateBucket002 {  
    public static void main(String[] args) {  
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using  
hard coding may result in leakage.  
        // Obtain an AK/SK pair on the management console.  
        String ak = System.getenv("ACCESS_KEY_ID");  
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");  
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are  
advised not to use hard coding, which may result in information leakage.  
        // Obtain an AK/SK pair and a security token using environment variables or import them in other  
ways.  
        // String securityToken = System.getenv("SECURITY_TOKEN");  
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it  
with the one in your actual situation.  
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";  
        // Obtain an endpoint using environment variables or import it in other ways.  
        //String endPoint = System.getenv("ENDPOINT");  
  
        // Create an ObsClient instance.  
        // Use the permanent AK/SK pair to initialize the client.  
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);  
        // Use the temporary AK/SK pair and security token to initialize the client.  
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);  
  
        try {  
            // Example bucket name  
            String exampleBucket = "examplebucket";  
            // Create a bucket.  
            ObsBucket bucket = obsClient.createBucket(exampleBucket);  
            System.out.println("CreateBucket successfully");  
            System.out.println("StatusCode: " + bucket.getStatusCode());  
            System.out.println("RequestId: " + bucket.getRequestId());  
        } catch (ObsException e) {  
            System.out.println("CreateBucket failed");  
            // Request failed. Print the HTTP status code.  
            System.out.println("HTTP Code: " + e.getResponseCode());  
            // Request failed. Print the server-side error code.  
            System.out.println("Error Code: " + e.getErrorCode());  
            // Request failed. Print the error details.  
            System.out.println("Error Message: " + e.getErrorMessage());  
            // Request failed. Print the request ID.  
            System.out.println("Request ID: " + e.getErrorRequestId());  
            System.out.println("Host ID: " + e.getErrorHostId());  
        } catch (Exception e) {  
            System.out.println("CreateBucket failed");  
            // Print other error information.  
            e.printStackTrace();  
        }  
    }  
}
```

## Helpful Links

- [Creating a Bucket](#)
- [\(GitHub\) Sample Code for Creating a Bucket](#)

- [OBS Error Codes](#)
- [Why Am I Unable to Create a Bucket?](#)

## 7.2 Obtaining a Bucket List (SDK for Java)

### Function

OBS buckets are containers for storing objects you upload to OBS. This API returns a list of all buckets that meet the specified conditions in all regions of the current account. Returned buckets are listed in alphabetical order by bucket name.

### Restrictions

- To obtain a bucket list, you must have the **obs:bucket:ListAllMyBuckets** permission. IAM is recommended for granting permissions. For details, see [IAM Custom Policies](#).
- To query the bucket location when listing buckets, you need to set **ListBucketsRequest.setQueryLocation** to **true**.

### Method

```
obsClient.listBuckets(ListBucketsRequest request)
```

### Request Parameters

**Table 7-15** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">ListBucketsRequest</a>	Yes	<b>Explanation:</b> Request parameters for listing buckets. For details, see <a href="#">Table 7-16</a> .

**Table 7-16** ListBucketsRequest

Parameter	Type	Mandatory (Yes/No)	Description
queryLocation	boolean	No	<p><b>Explanation:</b> Whether to query the bucket location</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li><b>true:</b> The bucket location is queried.</li> <li><b>false:</b> The bucket location is not queried.</li> </ul> <p><b>Default value:</b> <b>false</b></p>

## Responses

**Table 7-17** ListBucketsResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
owner	<a href="#">Owner</a>	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-18</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
buckets	List<ObsBucket>	<p><b>Explanation:</b> Bucket list information. For details, see <a href="#">Table 7-27</a>.</p> <p><b>Default value:</b> None</p>

**Table 7-18** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 7-19** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 7-20** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	<a href="#">Owner</a>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-18</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 7-21</a> .

**Table 7-21** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 7-22</a> .



Parameter	Type	Mandatory (Yes/No)	Description
permission	Permission	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 7-25</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 7-22** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 7-23</a>.</p>
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 7-24</a>.</p> <p><b>Default value:</b> None</p>

**Table 7-23** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 7-24** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 7-25** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>

Constant	Default Value	Description
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 7-26** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 7-27** ObsBucket

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b>                      HTTP status code.</p> <p><b>Value range:</b>                      A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.                      For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b>                      None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b>                      Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
owner	<b>Owner</b>	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-18</a>.</p>
creationDate	java.util.Date	<p><b>Explanation:</b> Time when the bucket is created.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
location	String	<p><b>Explanation:</b> Region where a bucket is located</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>
storageClass	<a href="#">StorageClass Enum</a>	<p><b>Explanation:</b> Bucket storage class that can be specified at bucket creation.</p> <p><b>Value range:</b> See <a href="#">Table 7-19</a>.</p> <p><b>Default value:</b> <b>STANDARD</b></p>
acl	<a href="#">AccessControlList</a>	<p><b>Explanation:</b> An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 7-26</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 7-20</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

## Code Examples

This example lists all buckets and queries the bucket regions.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListBucketsRequest;
import com.obs.services.model.ObsBucket;
import java.util.List;
public class ListBucket001 {
    public static void main(String[] args) {
```

```
// Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // List buckets.
    ListBucketsRequest request = new ListBucketsRequest();
    request.setQueryLocation(true);
    List<ObsBucket> buckets = obsClient.listBuckets(request);
    for (ObsBucket bucket : buckets) {
        System.out.println("ListBuckets successfully");
        System.out.println("BucketName:" + bucket.getBucketName());
        System.out.println("CreationDate:" + bucket.getCreationDate());
        System.out.println("Location:" + bucket.getLocation());
    }
} catch (ObsException e) {
    System.out.println("ListBuckets failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code: " + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("ListBuckets failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Listing Buckets](#)
- [OBS Error Codes](#)

## 7.3 Deleting a Bucket (SDK for Java)

### Function

This API deletes an empty bucket. You can delete buckets you no longer use to free up space. The name of a deleted bucket can be reused for another bucket at least 30 minutes after the deletion.



 **NOTE**

The data you proactively deleted from OBS cannot be recovered. Exercise caution when using this API.

## Restrictions

- Only empty buckets can be deleted. An empty bucket means that:
  - The bucket does not contain any object (including noncurrent versions and delete markers).
  - The bucket does not contain any fragments, which means that there are no multipart uploads that have not been completed in the bucket.
- To delete a bucket, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucket** in IAM or **DeleteBucket** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- Only empty buckets (without objects and part fragments) can be deleted.
- Bucket deletion is a non-idempotence operation and an error will be reported if the bucket you want to delete does not exist.

## Method

obsClient.deleteBucket(String [bucketName](#))

## Request Parameters

**Table 7-28** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 7-29** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example deletes bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HeaderResponse;
public class DeleteBucket001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
```

```
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Example bucket name
    String exampleBucket = "examplebucket";
    // Delete the bucket.
    HeaderResponse response = obsClient.deleteBucket(exampleBucket);
    System.out.println("DeleteBucket successfully");
    System.out.println("StatusCode:"+response.getStatusCode());
    System.out.println("RequestId:"+response.getRequestId());
} catch (ObsException e) {
    System.out.println("DeleteBucket failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message: " + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("DeleteBucket failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting an Object](#)
- [Managing Fragments](#)
- [Listing Objects](#) and [Listing Initiated Multipart Uploads in a Bucket](#). These two operations can help you determine whether a bucket is empty.
- [Deleting Buckets](#)
- [\(GitHub\) Sample Code for Deleting a Bucket](#)
- [OBS Error Codes](#)
- [Why Can't I Delete a Bucket?](#)

## 7.4 Checking Whether a Bucket Exists (SDK for Java)

### Function

This API checks whether a bucket exists. If an HTTP status code **200** is returned, the bucket exists. If **404** is returned, the bucket does not exist.

### Restrictions

- To check whether a bucket exists, you must be the bucket owner or have the required permission (**obs:bucket:HeadBucket** in IAM or **HeadBucket** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.headBucket(String bucketName)
```

## Request Parameters

**Table 7-30** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 7-31** List of returned results

Type	Description
boolean	<p><b>Explanation:</b> Whether the bucket exists</p> <p><b>Value range:</b> <b>true:</b> The bucket exists. <b>false:</b> The bucket does not exist.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example checks whether bucket **examplebucket** exists.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class HeadBucket001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Check whether the bucket exists.
            boolean exists = obsClient.headBucket(exampleBucket);
            System.out.println("HeadBucket successfully");
            System.out.println(exists);
        } catch (ObsException e) {
            System.out.println("HeadBucket failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code :" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
        }
    }
}
```

```
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
    } catch (Exception e) {
        System.out.println("HeadBucket failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Helpful Links

- [Obtaining Bucket Metadata](#). The same REST API is used to determine whether a bucket exists and to obtain bucket metadata.
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

# 7.5 Obtaining Bucket Metadata (SDK for Java)

## Function

This API returns information about a bucket, including the storage class, region, CORS rules, and redundancy policy.

## Restrictions

- To obtain bucket metadata, you must be the bucket owner or have the required permission (**obs:bucket:HeadBucket** in IAM or **HeadBucket** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- For details about values for methods such as **BucketMetadataInfoResult.getAllowMethods**, see the [CORS](#) configurations of the bucket.

## Method

obsClient.getBucketMetadata([BucketMetadataInfoRequest request](#))

## Request Parameters

Table 7-32 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BucketMetadataInfoRequest</a>	Yes	<b>Explanation:</b> Request parameters for obtaining bucket metadata. For details, see <a href="#">Table 7-33</a> .

**Table 7-33** BucketMetadataInfoRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
origin	String	No	<p><b>Explanation:</b> Origin of the cross-domain request specified by the preflight request. Generally, it is a domain name.</p> <p><b>Restrictions:</b> You can configure one or more rules and use at most one wildcard character (*) in each rule. If you want to configure multiple rules, separate them using a line breaker.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
requestHeaders	List<String>	No	<p><b>Explanation:</b> HTTP headers in a cross-origin request. Only CORS requests matching the allowed headers are valid.</p> <p><b>Restrictions:</b> You can enter multiple allowed headers, with one separated from another using a line break. Each header can contain one wildcard character (*) at most. Spaces, ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 7-34** BucketMetadataInfoResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
location	String	<p><b>Explanation:</b> Region where a bucket is located.</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>
obsVersion	String	<p><b>Explanation:</b> OBS version of the bucket.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>3.0</b> indicates the latest OBS version.</li> <li>• <b>--</b> indicates any version earlier than 3.0.</li> </ul> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Bucket storage class that can be specified at bucket creation.</p> <p><b>Value range:</b> See <a href="#">Table 7-36</a>.</p> <p><b>Default value:</b> <b>STANDARD</b></p>
allowOrigin	String	<p><b>Explanation:</b> If <b>Origin</b> in the request meets the CORS rules of the bucket, <b>AllowedOrigin</b> specified in the CORS rules is returned.</p> <p><b>Restrictions:</b> You can configure one or more rules and use at most one wildcard character (*) in each rule. If you want to configure multiple rules, separate them using a line breaker.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
allowHeaders	List<String>	<p><b>Explanation:</b> If <b>RequestHeader</b> in the request meets the CORS rules of the bucket, <b>AllowedHeader</b> specified in the CORS rules is returned.</p> <p><b>Restrictions:</b> You can enter multiple allowed headers, with one separated from another using a line break. Each header can contain one wildcard character (*) at most. Spaces, ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>
allowMethods	List<String>	<p><b>Explanation:</b> The allowed HTTP methods for a cross-origin request, indicating the operation types of buckets and objects.</p> <p><b>Value range:</b> The following HTTP methods are supported:</p> <ul style="list-style-type: none"> <li>• GET</li> <li>• PUT</li> <li>• HEAD</li> <li>• POST</li> <li>• DELETE</li> </ul> <p><b>Default value:</b> None</p>
exposeHeaders	List<String>	<p><b>Explanation:</b> The CORS-allowed additional headers in the response. These headers provide additional information to clients. By default, your browser can only access headers <b>Content-Length</b> and <b>Content-Type</b>. If your browser needs to access other headers, add them to the list of the allowed additional headers.</p> <p><b>Restrictions:</b> Spaces, wildcard characters (*), ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
maxAge	int	<p><b>Explanation:</b> Time your client can cache the response for a cross-origin request</p> <p><b>Restrictions:</b> Each CORS rule can contain only one <b>maxAge</b>.</p> <p><b>Value range:</b> An integer greater than 0, in seconds</p> <p><b>Default value:</b> 100</p>
epid	String	<p><b>Explanation:</b> Enterprise project ID that can be specified at bucket creation. If you have enabled EPS, you can obtain the project ID from the EPS console.</p> <p><b>Restrictions:</b> The value of <b>epid</b> is a UUID. If the default enterprise project is used, <b>0</b> is passed here or <b>epid</b> is not included. <b>epid</b> is not required for those who have not enabled the EPS.</p> <p>Example: <b>9892d768-2d13-450f-aac7-ed0e44c2585f</b></p> <p><b>Value range:</b> See <a href="#">How Do I Obtain an Enterprise Project ID?</a></p> <p><b>Default value:</b> None</p>
availableZone	AvailableZoneEnum	<p><b>Explanation:</b> Data redundancy policy of the bucket, indicating whether data is stored in a single AZ or multiple AZs. For details, see <a href="#">Table 7-35</a>.</p> <p><b>Restrictions:</b> Value <b>3az</b> means that data is stored in multiple AZs in the same region.</p> <p>If this header is not contained, data is stored in a single AZ.</p> <p><b>Default value:</b> None</p>

**Table 7-35** AvailableZoneEnum

Constant	Default Value	Description
MULTI_AZ	3az	Multi-AZ redundancy

**Table 7-36** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Code Examples

This example obtains the metadata of bucket **examplebucket**. The origin of the cross-origin request is **http://www.exampleorigin.com**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketMetadataInfoRequest;
import com.obs.services.model.BucketMetadataInfoResult;
public class GetBucketMetadata001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Example origin
            String exampleOrigin = "http://www.exampleorigin.com";
            BucketMetadataInfoRequest request = new BucketMetadataInfoRequest(exampleBucket);
            // Specify setOrigin only when cross origin resource sharing (CORS) is used.
            request.setOrigin(exampleOrigin);
            // Obtain the bucket metadata.
            BucketMetadataInfoResult result = obsClient.getBucketMetadata(request);
            System.out.println("GetBucketMetadata successfully");
            System.out.println("GetBucketType:" + result.getBucketType());
            System.out.println("GetLocation:" + result.getLocation());
            System.out.println("GetBucketStorageClass:" + result.getBucketStorageClass());
            System.out.println("GetObsVersion:" + result.getObsVersion());
            System.out.println("GetAllowOrigin:" + result.getAllowOrigin());
            System.out.println("GetMaxAge:" + result.getMaxAge());
        }
    }
}
```

```
System.out.println("GetAllowHeaders:" + result.getAllowHeaders());
System.out.println("GetAllowMethods:" + result.getAllowMethods());
System.out.println("GetExposeHeaders:" + result.getExposeHeaders());
} catch (ObsException e) {
    System.out.println("GetBucketMetadata failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("GetBucketMetadata failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining Bucket Metadata](#)
- [\(GitHub\) Sample Code for Obtaining Bucket Metadata](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.6 Configuring a Bucket ACL (SDK for Java)

### Function

OBS provides access control over buckets. You can use an access policy to define whether a user can perform certain operations on a specific bucket. OBS access control can be implemented using IAM permissions, bucket policies, and ACLs (including bucket and object ACLs). For more information, see [Introduction to OBS Access Control](#).

A bucket ACL applies permissions to a different account and its IAM users, rather than the current account and its IAM users. It can grant access to both a bucket (including the objects in it) and the bucket ACL. The granted access includes view and edit permissions. You must specify a bucket name when configuring a bucket ACL. For more information, see [ACLs](#).

You can configure a bucket [ACL](#) by referring to [Method](#).

OBS supports five types of bucket or object permissions. For details, see [Table 7-45](#).

OBS supports five types of pre-defined ACLs. For details, see [Table 7-39](#).

### Restrictions

- A bucket ACL can have up to 100 grants.
- To configure an ACL for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketAcl** in IAM or **PutBucketAcl** in a

bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

## Method

- Method 1: Configure a bucket ACL when creating a bucket.

```
obsBucket.setBucketName(exampleBucket);  
// Set the bucket ACL to PRIVATE.  
obsBucket.setAcl(AccessControlList.REST_CANNED_PRIVATE);  
// Create a bucket.  
obsClient.createBucket(obsBucket);
```
- Method 2: Use a pre-defined access policy to configure a bucket ACL.

```
// Set the bucket ACL to PRIVATE.  
obsClient.setBucketAcl(String exampleBucket, AccessControlList.REST_CANNED_PRIVATE);
```
- Method 3: Call **ObsClient.setBucketAcl** to configure a bucket ACL.

```
// Configure the bucket ACL.  
obsClient.setBucketAcl(String bucketName, AccessControlList acl);
```

## Request Parameters

**Table 7-37** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
acl	<a href="#">AccessControlList</a>	Yes	<p><b>Explanation:</b> An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 7-39</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 7-38</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

**Table 7-38** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<a href="#">Owner</a>	Yes	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-40</a>.</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

Parameter	Type	Mandatory (Yes/No)	Type
grants	Set<GrantAndPermission>	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 7-41</a> .

**Table 7-39** ACL

Constant	Description
AccessControllist.REST_CANNED_PRIVATE	Private read/write. A bucket or object can only be accessed by its owner.
AccessControllist.REST_CANNED_PUBLIC_READ	Public read. If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket. If this permission is granted on an object, anyone can read the content and metadata of the object.
AccessControllist.REST_CANNED_PUBLIC_READ_WRITE	Public read/write. If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks. If this permission is granted on an object, anyone can read the content and metadata of the object.

Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 7-40** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 7-41** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 7-42</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 7-45</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 7-42** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 7-43</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 7-44</a> . <b>Default value:</b> None

**Table 7-43** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 7-44** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 7-45** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>

Constant	Default Value	Description
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

## Responses

**Table 7-46** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

## Code Example: Setting a Pre-defined ACL When Creating a Bucket

This example configures a pre-defined ACL during the creation of bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.ObsBucket;
public class SetBucketAcl001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            ObsBucket obsBucket = new ObsBucket();
            // Example bucket name
            String exampleBucket = "examplebucket";
            obsBucket.setBucketName(exampleBucket);
            // Set the bucket ACL to be private.
            obsBucket.setAcl(AccessControlList.REST_CANNED_PRIVATE);
            // Create a bucket.
            obsClient.createBucket(obsBucket);
            System.out.println("SetBucketAcl successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
        }
    }
}
```



```
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("SetBucketAcl failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Setting a Pre-defined ACL for a Bucket

This example configures a pre-defined ACL for bucket `exampleBucket`.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
public class SetBucketAcl002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Set the bucket ACL to be private.
            obsClient.setBucketAcl(exampleBucket, AccessControlList.REST_CANNED_PRIVATE);
            System.out.println("SetBucketAcl successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("SetBucketAcl failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Code Example: Setting an ACL for a Bucket

This example configures an ACL for bucket `exampleBucket`.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.CanonicalGrantee;
import com.obs.services.model.GroupGrantee;
import com.obs.services.model.Owner;
import com.obs.services.model.Permission;

public class SetBucketAcl003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Example user ID
            String exampleUserId = "userid";
            // Example user ID
            String exampleOwnerId = "ownerid";
            AccessControlList acl = new AccessControlList();
            Owner owner = new Owner();
            owner.setId(exampleOwnerId);
            acl.setOwner(owner);
            // Grant the full control permission to a specified user.
            acl.grantPermission(new CanonicalGrantee(exampleUserId),
            Permission.PERMISSION_FULL_CONTROL);
            // Grant the read permission to all users.
            acl.grantPermission(GroupGrantee.ALL_USERS, Permission.PERMISSION_READ);
            // Configure the bucket ACL.
            obsClient.setBucketAcl(exampleBucket, acl);
            System.out.println("SetBucketAcl successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("SetBucketAcl failed");
            // Print other error information.
        }
    }
}
```

```
e.printStackTrace();  
    }  
  }  
}
```

## Helpful Links

- [Configuring a Bucket ACL](#)
- [\(GitHub\) Sample Code for Configuring a Bucket ACL](#)
- [OBS Error Codes](#)
- [Access Control FAQ](#)

## 7.7 Obtaining a Bucket ACL (SDK for Java)

### Function

OBS provides access control over buckets. You can use an access policy to define whether a user can perform certain operations on a specific bucket. OBS access control can be implemented using IAM permissions, bucket policies, and ACLs (including bucket and object ACLs). For more information, see [Introduction to OBS Access Control](#).

A bucket ACL applies permissions to a different account and its IAM users, rather than the current account and its IAM users. It can grant access to both a bucket (including the objects in it) and the bucket ACL. The granted access includes view and edit permissions. You must specify a bucket name when configuring a bucket ACL.

This API returns the ACL of a bucket.

### Restrictions

- To obtain the ACL of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketAcl** in IAM or **GetBucketAcl** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.getBucketAcl(String bucketName)
```

## Request Parameters

**Table 7-47** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-48** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	Yes	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 7-49</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <b>GrantAndPermission</b> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 7-50</a> .

**Table 7-49** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 7-50** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 7-51</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 7-54</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b>                      Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b>  <b>true:</b> The bucket ACL is applied to all objects in the bucket.  <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b>  <b>false</b></p>

Table 7-51 GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<p><b>Explanation:</b>                      Grantee (user) information. For details, see <a href="#">Table 7-52</a>.</p>
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<p><b>Explanation:</b>                      Grantee (user group) information.</p> <p><b>Value range:</b>                      See <a href="#">Table 7-53</a>.</p> <p><b>Default value:</b>                      None</p>

**Table 7-52 CanonicalGrantee**

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 7-53 GroupGrantee**

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 7-54 Permission**

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>



Constant	Default Value	Description
PERMISSION_WRITE	WRITE	Write permission. A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket. This permission is not available for objects.
PERMISSION_READ_ACP	READ_ACP	Permission to read an ACL. A grantee with this permission can obtain the ACL of a bucket or object. A bucket or object owner has this permission for their bucket or object by default.
PERMISSION_WRITE_ACP	WRITE_ACP	Permission to modify an ACL. A grantee with this permission can update the ACL of a bucket or object. A bucket or object owner has this permission for their bucket or object by default. This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.
PERMISSION_FULL_CONTROL	FULL_CONTROL	Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL. A grantee with this permission for a bucket has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the bucket. A grantee with this permission for an object has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the object.

## Code Examples

This example returns the ACL information of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
public class GetBucketAcl001 {
```

```
public static void main(String[] args) {
    // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
    // hard coding may result in leakage.
    // Obtain an AK/SK pair on the management console.
    String ak = System.getenv("ACCESS_KEY_ID");
    String sk = System.getenv("SECRET_ACCESS_KEY_ID");
    // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
    // advised not to use hard coding, which may result in information leakage.
    // Obtain an AK/SK pair and a security token using environment variables or import them in other
    // ways.
    // String securityToken = System.getenv("SECURITY_TOKEN");
    // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
    // with the one in your actual situation.
    String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
    // Obtain an endpoint using environment variables or import it in other ways.
    //String endPoint = System.getenv("ENDPOINT");

    // Create an ObsClient instance.
    // Use the permanent AK/SK pair to initialize the client.
    ObsClient obsClient = new ObsClient(ak, sk, endPoint);
    // Use the temporary AK/SK pair and security token to initialize the client.
    // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

    try {
        // Example bucket name
        String exampleBucket = "examplebucket";
        // Get the bucket ACL.
        AccessControlList acl = obsClient.getBucketAcl(exampleBucket);
        System.out.println("GetBucketAcl successfully");
        System.out.println(acl);
    } catch (ObsException e) {
        System.out.println("GetBucketAcl failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("GetBucketAcl failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Helpful Links

- [Obtaining the Bucket ACL](#)
- [\(GitHub\) Sample Code for Obtaining the Bucket ACL](#)
- [OBS Error Codes](#)
- [Access Control FAQ](#)

## 7.8 Configuring a Bucket Policy (SDK for Java)

### Function

OBS provides access control over buckets. You can use an access policy to define whether a user can perform certain operations on a specific bucket. OBS access

control can be implemented using IAM permissions, bucket policies, and ACLs. For more information, see [Introduction to OBS Access Control](#).

A bucket policy applies to both the bucket and objects therein. You can use a bucket policy to grant permissions for a bucket and objects therein to IAM users or other accounts. If you want IAM users to have different permissions for a bucket, you need to configure different bucket policies for each user.

Besides bucket ACLs, bucket owners can use bucket policies to centrally control access to buckets and objects in buckets.

You can call `ObsClient.setBucketPolicy` to configure a bucket policy.

For more information, see [Bucket Policy](#).

## Restrictions

- Permissions for creating a bucket and obtaining a bucket list are service level and should be granted using [IAM Permissions](#).
- Due to data caching, after a bucket policy is configured, it takes 5 minutes at most for the policy to take effect.
- To configure a bucket policy, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketPolicy** in IAM or **PutBucketPolicy** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- The latest policy configurations will overwrite the preceding configurations when you call the API for configuring a bucket policy. For example, if you have configured bucket policies A, B, C, and D and you want to add a new bucket policy E, you must add policy E to the file containing the existing four policies and then upload the file with all policies contained. Likewise, if you want to delete bucket policy D, you must remove it from the file containing policies A, B, C, and D, and then upload the file without policy D contained.
- For details about the bucket policy format (JSON), see the [Object Storage Service API Reference](#).
- OBS returns **404 NoSuchBucketPolicy** when you call this API in the following scenarios:
  - The specified bucket policy does not exist.
  - The standard policy of the specified bucket is set to **Private** and no advanced policies are configured.

## Method

```
obsClient.setBucketPolicy(String bucketName, String policy)
```

## Request Parameters

**Table 7-55** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
policy	String	Yes	<p><b>Explanation:</b> Policy information in JSON format</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The bucket name contained in the <b>Resource</b> parameter of the policy must be the same as the one specified for the current bucket policy.</li> <li>For details about the policy format, see <a href="#">Bucket Policy Parameters</a>.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-56** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example configures a policy for bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class SetBucketPolicy001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Example bucket policy
            String examplePolicy =
                "{ \"Statement\": [{ \"Principal\": \"*\", \"Effect\": \"Allow\", \"Action\": \"ListBucket\", \"Resource\"
                \": \"\"
                    + exampleBucket
                    + \"\" } ] }";
            obsClient.setBucketPolicy(exampleBucket, examplePolicy);
            System.out.println("SetBucketAcl successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("SetBucketAcl failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Configuring a Bucket Policy](#)
- [\(GitHub\) Sample Code for Configuring a Bucket Policy](#)
- [OBS Error Codes](#)

- [Access Control FAQ](#)

## 7.9 Obtaining the Policy of a Bucket (SDK for Java)

### Function

OBS provides access control over buckets. You can use an access policy to define whether a user can perform certain operations on a specific bucket. OBS access control can be implemented using IAM permissions, bucket policies, and ACLs. For more information, see [Introduction to OBS Access Control](#).

This API returns the policy of a bucket.

### Restrictions

- OBS returns **404 NoSuchBucketPolicy** when you call this API in the following scenarios:
  - The specified bucket policy does not exist.
  - The standard policy of the specified bucket is set to **Private** and no advanced policies are configured.
- To obtain the policy of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketPolicy** in IAM or **GetBucketPolicy** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.getBucketPolicy(String bucketName)
```

## Request Parameters

**Table 7-57** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>



## Responses

**Table 7-58** List of returned results

Parameter	Type	Description
policy	String	<p><b>Explanation:</b> Policy information in JSON format</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The bucket name contained in the <b>Resource</b> parameter of the policy must be the same as the one specified for the current bucket policy.</li> <li>For details about the policy format, see <a href="#">Bucket Policy Parameters</a>.</li> </ul> <p><b>Default value:</b> None</p>

## Code Examples

This example returns the policy of bucket `exampleBucket`.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class GetBucketPolicy001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            String policy = obsClient.getBucketPolicy(exampleBucket);
            System.out.println("\t" + policy);
        } catch (ObsException e) {
            System.out.println("GetBucketAcl failed");
        }
    }
}
```

```
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("GetBucketAcl failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining the Bucket Policy](#)
- [\(GitHub\) Sample Code for Obtaining a Bucket Policy](#)
- [OBS Error Codes](#)
- [Access Control FAQ](#)

## 7.10 Deleting a Bucket Policy (SDK for Java)

### Function

OBS provides access control over buckets. You can use an access policy to define whether a user can perform certain operations on a specific bucket. OBS access control can be implemented using IAM permissions, bucket policies, and ACLs. For more information, see [Introduction to OBS Access Control](#).

You can call **ObsClient.deleteBucketPolicy** to delete the policy of a bucket. OBS returns **204 No Content** if the deletion is successful or the requested bucket policy does not exist.

### Restrictions

- To delete the policy of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucketPolicy** in IAM or **DeleteBucketPolicy** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.deleteBucketPolicy(String bucketName)
```

## Request Parameters

**Table 7-59** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-60** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example deletes the policy of bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteBucketPolicy001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
```

```
try {
    // Example bucket name
    String exampleBucket = "examplebucket";
    obsClient.deleteBucketPolicy(exampleBucket);
} catch (ObsException e) {
    System.out.println("DeleteBucketAcl failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("DeleteBucketAcl failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

[Deleting a Bucket Policy](#)

[\(GitHub\) Sample Code for Deleting a Bucket Policy](#)

[OBS Error Codes](#)

[Access Control FAQ](#)

## 7.11 Obtaining the Region of a Bucket (SDK for Java)

### Function

This API returns the region where a bucket is located.

### Restrictions

- To obtain the region of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketLocation** in IAM or **GetBucketLocation** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- When creating a bucket, you can specify its location. For details, see [Creating a Bucket](#).

### Method

obsClient.getBucketLocation(String [bucketName](#))

## Request Parameters

**Table 7-61** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-62** BucketLocationResponse

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
location	String	<p><b>Explanation:</b> Region where a bucket is located.</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>

## Code Examples

This example returns the region where bucket **exampleBucket** locates.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class GetBucketLocation001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Obtain the bucket region.
            String location = obsClient.getBucketLocation(exampleBucket);
            System.out.println("GetBucketLocation successfully");
            System.out.println("Location:" + location);
        } catch (ObsException e) {
            System.out.println("GetBucketLocation failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("GetBucketLocation failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Obtaining the Region of a Bucket](#)
- [\(GitHub\) Sample Code for Obtaining the Region of a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)



## 7.12 Obtaining Storage Information of a Bucket (SDK for Java)

### Function

This API returns the storage information of a bucket, including the number of objects and the space occupied by the objects in the bucket.

#### NOTE

OBS measures bucket storage statistics in the background and does not update the storage information in real time. So, you are advised not to perform real-time verification on the storage information.

### Restrictions

- To obtain the storage information of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketStorageInfo** in IAM or **GetBucketStorage** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.getBucketStorageInfo(String bucketName)
```

## Request Parameters

Table 7-63 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• A bucket name must be unique across all accounts and regions.</li><li>• A bucket name:<ul style="list-style-type: none"><li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li><li>– Cannot be formatted as an IP address.</li><li>– Cannot start or end with a hyphen (-) or period (.).</li><li>– Cannot contain two consecutive periods (.), for example, <b>my..bucket</b>.</li><li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li></ul></li><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-64** BucketStorageInfo

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
size	long	<p><b>Explanation:</b> Size of the space occupied by objects in the bucket.</p> <p><b>Value range:</b> A non-negative integer, in bytes.</p> <p><b>Default value:</b> None</p>
objectNum	long	<p><b>Explanation:</b> Number of objects in the bucket.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example returns the storage information of bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketStorageInfo;
public class GetBucketStorageInfo001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
```

```
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Example bucket name
    String exampleBucket = "examplebucket";
    // Obtain the bucket storage information.
    BucketStorageInfo storageInfo = obsClient.getBucketStorageInfo(exampleBucket);
    System.out.println("GetBucketStorageInfo successfully");
    System.out.println("GetObjectNumber:" + storageInfo.getObjectNumber());
    System.out.println("GetStorageSize:" + storageInfo.getSize() + " bytes");
} catch (ObsException e) {
    System.out.println("GetBucketStorageInfo failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("GetBucketStorageInfo failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining Storage Information of a Bucket](#)
- [\(GitHub\) Sample Code for Obtaining Storage Information of a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.13 Configuring a Storage Quota (SDK for Java)

### Function

A quota limits the maximum capacity allowed in a bucket. By default, there is no limit on the storage capacity of the entire OBS system or a single bucket, and any number of objects can be stored. You can set a storage quota to control the total size of objects that can be uploaded to the bucket. After the storage quota has been reached, object upload will fail.

A quota limit does not apply to the objects uploaded before the quota is configured. If the specified quota is already smaller than the total size of existing objects in the bucket, the existing objects in the bucket will not be deleted, but no more object can be uploaded to the bucket later. In this case, to upload new objects, you must delete some of the existing objects to make the used space below the quota limit.

## Restrictions

- A bucket quota must be a non-negative integer in bytes.
- OBS does not provide an API for deleting bucket storage quotas. You can set the bucket storage quota to **0** to cancel the limit.
- To configure a storage quota for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketQuota** in IAM or **PutBucketQuota** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

## Method

```
obsClient.setBucketQuota(String bucketName, BucketQuota bucketQuota)
```

## Request Parameters

**Table 7-65** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
bucketQuota	<a href="#">BucketQuota</a>	Yes	<p><b>Explanation:</b> Bucket quota information</p> <p><b>Restrictions:</b> See <a href="#">Table 7-66</a>.</p>

**Table 7-66** BucketQuota

Parameter	Type	Mandatory (Yes/No)	Description
bucketQuota	long	Yes	<p><b>Explanation:</b> Bucket quota.</p> <p><b>Value range:</b> A non-negative integer, in bytes.</p> <p><b>Default value:</b> <b>0</b>, indicating that there is no limit on the bucket quota.</p>

## Responses

**Table 7-67** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example configures a quota for bucket `exampleBucket`.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.BucketQuota;
public class SetBucketQuota001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Example bucket quota
            long exampleBucketQuota = 1024 * 1024 * 100L;
            // Set the bucket quota to 100 MB.
            BucketQuota quota = new BucketQuota(exampleBucketQuota);
            obsClient.setBucketQuota(exampleBucket, quota);
            System.out.println("SetBucketQuota successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketQuota failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("SetBucketQuota failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Configuring a Bucket Storage Quota](#)
- [\(GitHub\) Sample Code for Configuring a Storage Quota](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)



## 7.14 Obtaining a Bucket Storage Quota (SDK for Java)

### Function

This API returns the storage quota (upper limit of the storage capacity) of a bucket. If the quota is 0, there is no upper limit on the bucket capacity.

### Restrictions

- A bucket quota must be a non-negative integer in bytes.
- A frozen bucket owner (due to account in arrears) is not allowed to query the bucket storage quota.
- To obtain the storage quota of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketQuota** in IAM or **GetBucketQuota** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.getBucketQuota(String bucketName)
```

## Request Parameters

**Table 7-68** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-69** BucketQuota

Parameter	Type	Mandatory (Yes/No)	Description
bucketQuota	long	Yes	<p><b>Explanation:</b> Bucket quota.</p> <p><b>Value range:</b> A non-negative integer, in bytes.</p> <p><b>Default value:</b> 0, indicating that there is no limit on the bucket quota.</p>

## Code Examples

This example returns the quota of bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketQuota;
public class GetBucketQuota001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Obtain the bucket quota.
            BucketQuota quota = obsClient.getBucketQuota(exampleBucket);
            System.out.println("GetBucketQuota successfully");
            System.out.println("GetBucketQuota:" + quota.getBucketQuota() + " bytes");
        } catch (ObsException e) {
            System.out.println("GetBucketQuota failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
        }
    }
}
```

```

// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
System.out.println("GetBucketQuota failed");
// Print other error information.
e.printStackTrace();
}
}
}

```

## Helpful Links

- [Querying Bucket Storage Quota](#)
- [\(GitHub\) Sample Code for Obtaining a Bucket Storage Quota](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.15 Configuring a Storage Class for a Bucket (SDK for Java)

### Function

OBS offers the following storage classes: Standard, Infrequent Access, and Archive. For details, see [Storage Classes](#).

This API configures a storage class for a bucket. 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 following table lists the three available storage classes.

Storage Class	Description	Value in OBS Java SDK
Standard	Features low access latency and high throughput and is used for storing massive, frequently accessed (multiple times a month) or small objects (< 1 MB) requiring quick response.	StorageClassEnum.STANDARD
Infrequent Access	Used for storing data that is semi-frequently accessed (fewer than 12 times a year) but is instantly available when needed.	StorageClassEnum.WARM
Archive	Used for storing rarely accessed (once a year) data.	StorageClassEnum.COLD

For more information, see [Bucket Storage Classes](#).

## Restrictions

- To configure a storage class for a bucket, you must be the bucket owner or have the required permission (**obs:PutBucketStoragePolicy** in IAM or **PutBucketStoragePolicy** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- The bucket storage class is independent from the storage classes of objects in the bucket. When uploading an object, if you do not specify a storage class for the object, the object will use the same storage class that the bucket uses. However, after the object is uploaded, its storage class will not change as that of the bucket changes. Likewise, the storage class of the bucket will also not change if the storage class of any objects therein changes.

## Method

```
obsClient.setBucketStoragePolicy(String bucketName,  
BucketStoragePolicyConfiguration bucketStorage)
```

## Request Parameters

**Table 7-70** Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b></p>

Parameter	Type	Mandatory (Yes/No)	Description
			None
bucketStorage	<b>BucketStoragePolicy-Configuration</b> (Inheriting <b>HeaderResponse</b> )	Yes	<b>Explanation:</b> Storage class of the bucket. <b>Value range:</b> See <a href="#">Table 7-71</a> . <b>Default value:</b> None

**Table 7-71** BucketStoragePolicyConfiguration

Parameter	Type	Description
storageClass	<b>StorageClassEnum</b>	<b>Explanation:</b> Storage class of the bucket. <b>Value range:</b> See <a href="#">Table 7-72</a> . <b>Default value:</b> None

**Table 7-72** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Responses

**Table 7-73** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example configures a storage class for bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.AvailableZoneEnum;
import com.obs.services.model.CreateBucketRequest;
import com.obs.services.model.ObsBucket;
import com.obs.services.model.StorageClassEnum;

public class CreateBucket001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");

        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
```



```
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    CreateBucketRequest request = new CreateBucketRequest();
    // Example bucket name
    String exampleBucket = "examplebucket";
    // Example bucket location
    String exampleLocation = "eu-west-101";
    request.setBucketName(exampleBucket);
    // Set the bucket ACL to private (the default value).
    request.setAcl(AccessControlList.REST_CANNED_PRIVATE);
    // Set the bucket storage class to Standard.
    request.setBucketStorageClass(StorageClassEnum.STANDARD);
    // Set the bucket location (EU-Dublin is used as an example). location must match the endpoint.
    request.setLocation(exampleLocation);
    // Specify the multi-AZ redundancy for the bucket. If this parameter is not configured, a single-AZ
bucket will be created.
    request.setAvailableZone(AvailableZoneEnum.MULTI_AZ);
    // Create a bucket.
    ObsBucket bucket = obsClient.createBucket(request);
    // The bucket is created.
    System.out.println("CreateBucket successfully");
    System.out.println("RequestId:"+bucket.getRequestId());

} catch (ObsException e) {
    System.out.println("CreateBucket failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code: " + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message: " + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("CreateBucket failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Configuring a Storage Class for a Bucket](#)
- [\(GitHub\) Sample Code for Configuring a Storage Class for a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.16 Obtaining the Storage Class of a Bucket (SDK for Java)

### Function

OBS offers the following storage classes: Standard, Infrequent Access, and Archive. For details, see [Storage Classes](#).

This API returns the storage class of a bucket.

### Restrictions

- To obtain a bucket's storage class, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketStoragePolicy** in IAM or **GetBucketStoragePolicy** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

```
obsClient.getBucketStoragePolicy(String bucketName)
```

## Request Parameters

**Table 7-74** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-75** BucketStoragePolicyConfiguration

Parameter	Type	Description
storageClass	<a href="#">StorageClassEnum</a>	<b>Explanation:</b> Storage class of the bucket. For details, see <a href="#">Table 7-76</a> .

**Table 7-76** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Code Examples

This example configures a storage class for bucket **exampleBucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketStoragePolicyConfiguration;
public class GetBucketStoragePolicy001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Obtain the bucket's storage class.
            BucketStoragePolicyConfiguration storagePolicy =
```

```
obsClient.getBucketStoragePolicy(exampleBucket);
    System.out.println("GetBucketStoragePolicy successfully");
    System.out.println("GetBucketStorageClass:" + storagePolicy.getBucketStorageClass());
} catch (ObsException e) {
    System.out.println("GetBucketStoragePolicy failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("GetBucketStoragePolicy failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining the Storage Class of a Bucket](#)
- [\(GitHub\) Sample Code for Obtaining the Storage Class of a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.17 Bucket Inventory (SDK for Java)

### 7.17.1 Configuring an Inventory Rule (SDK for Java)

#### Function

This API configures an inventory rule for the bucket. With this API, object information in a bucket (source) is regularly listed and saved as CSV files. These files are then stored in a specified bucket (destination). In this manner, you can easily manage objects in a bucket. A source bucket can also be the destination bucket. A bucket inventory file contains the following object-related information: object versions, sizes, storage classes, tags, encryption statuses, and last modification time.

You can encrypt bucket inventory files using SSE-KMS.

#### Restrictions

- To configure an inventory rule for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketInventoryConfiguration** in IAM or **PutBucketInventoryConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- **Bucket versions**

- Bucket inventories can be generated only for OBS 3.0 buckets, but they can be stored in either OBS 3.0 or OBS 2.0.
- **Number of bucket inventory rules**
  - A bucket can have a maximum of 10 inventory rules.
- **Source and destination buckets**
  - The source bucket (for which a bucket inventory rule is configured) and the destination bucket (where the generated inventory files are stored) must belong to the same account.
  - The source bucket and the destination bucket must be in the same region.
  - Default encryption cannot be enabled for the destination bucket configured for storing inventory files.
- **Functions**
  - Inventory files must be in the CSV format.
  - OBS can generate inventory files for all objects in a bucket or a group of objects whose names begin with the same prefix.
  - If a bucket has multiple inventory rules, the filter criteria in these rules must not overlap.
    - If a bucket already has an inventory rule for the entire bucket, new inventory rules that filter objects by prefixes cannot be created. If you need an inventory rule that covers only a subset of objects in the bucket, first delete the inventory rule configured for the entire bucket.
    - If an inventory rule that filters objects by a specified prefix already exists, you cannot create an inventory rule for the entire bucket. To create an inventory rule for the entire bucket, make sure that the bucket has no inventory rules that filter objects by specified prefixes.
    - If a bucket already has an inventory rule that filters objects by the object name prefix, such as **ab**, the filter of a new inventory rule cannot be any prefix that contains **a**, **b**, or **ab**. If you still need to create such rules, delete the inventory rule that uses the prefix **ab** first.
  - Bucket inventory files only support SSE-KMS encryption.
- **Permissions**
  - Inventory files are uploaded to the destination bucket by an OBS system user. Therefore, you need to grant the system user the permission to write objects to the destination bucket.
- **Others**
  - The bucket inventory function is offered for free, but inventory files are billed for the storage they use.

## Method

obsClient.setInventoryConfiguration([SetInventoryConfigurationRequest request](#))

## Request Parameters

**Table 7-77** SetInventoryConfigurationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
inventoryConfiguration	<b>InventoryConfiguration</b>	Yes	<p><b>Explanation:</b> Inventory configurations for a bucket. For details, see <a href="#">Table 7-78</a>.</p>

**Table 7-78** InventoryConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
configurationId	String	Yes	<p><b>Explanation:</b> ID of a bucket inventory rule.</p> <p><b>Restrictions:</b> The rule ID allows letters (a-z, A-Z), digits (0-9), hyphens (-), underscores (_), and periods (.).</p> <p><b>Value range:</b> The value can be up to 64 characters long.</p> <p><b>Default value:</b> None</p>
isEnabled	boolean	Yes	<p><b>Explanation:</b> Whether the bucket inventory rule is enabled.</p> <p><b>Value range:</b> <b>true:</b> The rule is enabled, and an inventory file is generated. <b>false:</b> The rule is disabled. No inventory file is generated.</p> <p><b>Default value:</b> true</p>
objectPrefix	String	No	<p><b>Explanation:</b> Used to filter objects. Only objects with the specified name prefix are included in the inventory.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
frequency	String	Yes	<p><b>Explanation:</b> Intervals when inventories are generated. You can set this parameter to <b>Daily</b> or <b>Weekly</b>. An inventory is generated within one hour from when it is configured for the first time. Then it is generated at the specified intervals.</p> <p><b>Value range:</b> <b>Daily:</b> Inventories are generated once a day. <b>Weekly:</b> Inventories are generated once a week.</p> <p><b>Default value:</b> None</p>
inventory Format	String	Yes	<p><b>Explanation:</b> Inventory file format. Only the CSV format is supported.</p> <p><b>Value range:</b> CSV</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
destinationBucket	String	Yes	<p><b>Explanation:</b> Name of the bucket for storing inventories.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
inventoryPrefix	String	No	<p><b>Explanation:</b> The prefix of the inventory file name.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> If you do not specify this parameter, <b>BucketInventory</b> is used as the prefix by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	<p><b>Explanation:</b> Whether versions of objects are included in an inventory.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>If this parameter is set to <b>All</b>, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: <b>VersionId</b>, <b>IsLatest</b>, and <b>DeleteMarker</b>.</li> <li>If this parameter is set to <b>Current</b>, the inventory only lists information about the current object version and does not include any version-related fields.</li> </ul> <p><b>Default value:</b> None</p>
optionalFields	ArrayList<String>	No	<p><b>Explanation:</b> Additional object metadata fields that are contained in an inventory file.</p> <p><b>Value range:</b></p> <p><b>Size:</b> Object size.</p> <p><b>LastModifiedDate:</b> Last time when the object was modified.</p> <p><b>StorageClass:</b> The storage class of the object.</p> <p><b>ETag:</b> The ETag value of the object.</p> <p><b>IsMultipartUploaded:</b> Whether the object was uploaded in a <b>multipart upload</b>.</p> <p><b>ReplicationStatus:</b> The cross-region replication status of the object.</p> <p><b>EncryptionStatus:</b> The encryption status of the object.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 7-79** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example configures an inventory for bucket **example-bucket** to list objects with the name prefix **exampleObjectPrefix**. The inventory files are stored in bucket **example-target-bucket** and the name prefix of the inventory files is **exampleInventoryPrefix**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HeaderResponse;
import com.obs.services.model.inventory.InventoryConfiguration;
import com.obs.services.model.inventory.SetInventoryConfigurationRequest;
public class SetInventoryConfiguration001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
```

```
// Obtain an endpoint using environment variables or import it in other ways.
// String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the following parameters.
    String exampleBucketName = "example-bucket";
    String exampleTargetBucketName = "example-target-bucket";
    String exampleConfigurationId = "exampleConfigId001";
    String exampleInventoryPrefix = "exampleInventoryPrefix";
    String exampleObjectPrefix = "exampleObjectPrefix";
    // Set parameters for the inventory rule.
    InventoryConfiguration exampleConfiguration = new InventoryConfiguration();
    exampleConfiguration.setDestinationBucket(exampleTargetBucketName);
    exampleConfiguration.setConfigurationId(exampleConfigurationId);
    exampleConfiguration.setInventoryFormat(InventoryConfiguration.InventoryFormatOptions.CSV);
    exampleConfiguration.setFrequency(InventoryConfiguration.FrequencyOptions.DAILY);
    exampleConfiguration.setEnabled(true);
    exampleConfiguration.setIncludedObjectVersions(
        InventoryConfiguration.IncludedObjectVersionsOptions.CURRENT);
    exampleConfiguration.setInventoryPrefix(exampleInventoryPrefix);
    exampleConfiguration.setObjectPrefix(exampleObjectPrefix);
    // Set additional metadata fields that will be contained in the inventory file.
    exampleConfiguration
        .getOptionalFields()
        .add(InventoryConfiguration.OptionalFieldOptions.IS_MULTIPART_UPLOADED);
    exampleConfiguration.getOptionalFields().add(InventoryConfiguration.OptionalFieldOptions.ETAG);
    exampleConfiguration
        .getOptionalFields()
        .add(InventoryConfiguration.OptionalFieldOptions.REPLICATION_STATUS);
    SetInventoryConfigurationRequest request =
        new SetInventoryConfigurationRequest(exampleBucketName, exampleConfiguration);
    // Set the inventory rule.
    HeaderResponse response = obsClient.setInventoryConfiguration(request);
    System.out.println("SetInventoryConfiguration succeeded");
    System.out.println("HTTP Code: " + response.getStatusCode());
} catch (ObsException e) {
    System.out.println("SetInventoryConfiguration failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code: " + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code: " + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message: " + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID: " + e.getErrorRequestId());
    System.out.println("Host ID: " + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("SetInventoryConfiguration failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Configuring Bucket Inventories](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.17.2 Obtaining an Inventory Rule (SDK for Java)

### Function

This API returns an inventory rule (identified by **configurationId**) for the bucket.

### Restrictions

- To obtain a bucket inventory rule, you must be the bucket owner or have the required permission (**obs:bucket:GetInventoryConfiguration** in IAM or **GetInventoryConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.getInventoryConfiguration([GetInventoryConfigurationRequest request](#))

## Request Parameters

**Table 7-80** GetInventoryConfigurationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>
configurationId	String	Yes	<p><b>Explanation:</b>            ID of the inventory rule.</p> <p><b>Restrictions:</b>            The ID can be up to 64 bytes long and allows letters (a-z, A-Z), digits (0-9), hyphens (-), underscores (_), and periods (.</p> <p><b>Default value:</b>            None</p>

## Responses

**Table 7-81** GetInventoryConfigurationResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
inventoryConfiguration	<a href="#">InventoryConfiguration</a>	<p><b>Explanation:</b> Bucket inventory configurations. For details, see <a href="#">Table 7-82</a>.</p>



**Table 7-82** InventoryConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
configurationId	String	Yes	<p><b>Explanation:</b> ID of a bucket inventory rule.</p> <p><b>Restrictions:</b> The rule ID allows letters (a-z, A-Z), digits (0-9), hyphens (-), underscores (_), and periods (.).</p> <p><b>Value range:</b> The value can be up to 64 characters long.</p> <p><b>Default value:</b> None</p>
isEnabled	boolean	Yes	<p><b>Explanation:</b> Whether the bucket inventory rule is enabled.</p> <p><b>Value range:</b> <b>true:</b> The rule is enabled, and an inventory file is generated. <b>false:</b> The rule is disabled. No inventory file is generated.</p> <p><b>Default value:</b> true</p>
objectPrefix	String	No	<p><b>Explanation:</b> Used to filter objects. Only objects with the specified name prefix are included in the inventory.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
frequency	String	Yes	<p><b>Explanation:</b> Intervals when inventories are generated. You can set this parameter to <b>Daily</b> or <b>Weekly</b>. An inventory is generated within one hour from when it is configured for the first time. Then it is generated at the specified intervals.</p> <p><b>Value range:</b> <b>Daily:</b> Inventories are generated once a day. <b>Weekly:</b> Inventories are generated once a week.</p> <p><b>Default value:</b> None</p>
inventory Format	String	Yes	<p><b>Explanation:</b> Inventory file format. Only the CSV format is supported.</p> <p><b>Value range:</b> CSV</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
destinationBucket	String	Yes	<p><b>Explanation:</b> Name of the bucket for storing inventories.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
inventoryPrefix	String	No	<p><b>Explanation:</b> The prefix of the inventory file name.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> If you do not specify this parameter, <b>BucketInventory</b> is used as the prefix by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	<p><b>Explanation:</b> Whether versions of objects are included in an inventory.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>If this parameter is set to <b>All</b>, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: <b>VersionId</b>, <b>IsLatest</b>, and <b>DeleteMarker</b>.</li> <li>If this parameter is set to <b>Current</b>, the inventory only lists information about the current object version and does not include any version-related fields.</li> </ul> <p><b>Default value:</b> None</p>
optionalFields	ArrayList<String>	No	<p><b>Explanation:</b> Additional object metadata fields that are contained in an inventory file.</p> <p><b>Value range:</b></p> <p><b>Size:</b> Object size.</p> <p><b>LastModifiedDate:</b> Last time when the object was modified.</p> <p><b>StorageClass:</b> The storage class of the object.</p> <p><b>ETag:</b> The ETag value of the object.</p> <p><b>IsMultipartUploaded:</b> Whether the object was uploaded in a <b>multipart upload</b>.</p> <p><b>ReplicationStatus:</b> The cross-region replication status of the object.</p> <p><b>EncryptionStatus:</b> The encryption status of the object.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example returns the inventory rule whose ID is **exampleConfigId001** for bucket **example-bucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.inventory.GetInventoryConfigurationRequest;
import com.obs.services.model.inventory.GetInventoryConfigurationResult;
import com.obs.services.model.inventory.InventoryConfiguration;
public class GetInventoryConfiguration001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the following parameters.
            String exampleBucketName = "example-bucket";
            String exampleConfigurationId = "exampleConfigId001";
            GetInventoryConfigurationRequest request =
                new GetInventoryConfigurationRequest(exampleBucketName, exampleConfigurationId);
            // Obtain the inventory rule.
            GetInventoryConfigurationResult result = obsClient.getInventoryConfiguration(request);
            InventoryConfiguration inventoryConfiguration = result.getInventoryConfiguration();
            // Print all parameters in the inventory rule.
            System.out.println("ConfigurationId:" + inventoryConfiguration.getConfigurationId());
            System.out.println("DestinationBucket:" + inventoryConfiguration.getDestinationBucket());
            System.out.println("InventoryFormat:" + inventoryConfiguration.getInventoryFormat());
            System.out.println("Enabled:" + inventoryConfiguration.getEnabled());
            System.out.println("Frequency:" + inventoryConfiguration.getFrequency());
            System.out.println("IncludedObjectVersions:" + inventoryConfiguration.getIncludedObjectVersions());
            System.out.println("InventoryPrefix:" + inventoryConfiguration.getInventoryPrefix());
            System.out.println("ObjectPrefix:" + inventoryConfiguration.getObjectPrefix());
            System.out.println("OptionalFields:" + inventoryConfiguration.getOptionalFields());
            // Print the HTTP status code.
            System.out.println("HTTP Code: " + result.getStatusCode());
            System.out.println("GetInventoryConfiguration succeeded");
        } catch (ObsException e) {
            System.out.println("GetInventoryConfiguration failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code: " + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
        } catch (Exception e) {
            System.out.println("GetInventoryConfiguration failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Obtaining Bucket Inventory Configurations](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.17.3 Listing Inventory Rules (SDK for Java)

### Function

This API returns a list of all inventory rules for the bucket.

### Restrictions

- To list inventory rules for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetInventoryConfiguration** in IAM or **GetInventoryConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.listInventoryConfiguration([ListInventoryConfigurationRequest request](#))

## Request Parameters

**Table 7-83** ListInventoryConfigurationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (.), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 7-84** ListInventoryConfigurationResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
inventoryConfigurations	List< <a href="#">InventoryConfiguration</a> >	<p><b>Explanation:</b> All inventory configurations of the bucket. For details, see <a href="#">Table 7-85</a>.</p>



**Table 7-85** InventoryConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
configurationId	String	Yes	<p><b>Explanation:</b> ID of a bucket inventory rule.</p> <p><b>Restrictions:</b> The rule ID allows letters (a-z, A-Z), digits (0-9), hyphens (-), underscores (_), and periods (.).</p> <p><b>Value range:</b> The value can be up to 64 characters long.</p> <p><b>Default value:</b> None</p>
isEnabled	boolean	Yes	<p><b>Explanation:</b> Whether the bucket inventory rule is enabled.</p> <p><b>Value range:</b> <b>true:</b> The rule is enabled, and an inventory file is generated. <b>false:</b> The rule is disabled. No inventory file is generated.</p> <p><b>Default value:</b> true</p>
objectPrefix	String	No	<p><b>Explanation:</b> Used to filter objects. Only objects with the specified name prefix are included in the inventory.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
frequency	String	Yes	<p><b>Explanation:</b> Intervals when inventories are generated. You can set this parameter to <b>Daily</b> or <b>Weekly</b>. An inventory is generated within one hour from when it is configured for the first time. Then it is generated at the specified intervals.</p> <p><b>Value range:</b> <b>Daily:</b> Inventories are generated once a day. <b>Weekly:</b> Inventories are generated once a week.</p> <p><b>Default value:</b> None</p>
inventory Format	String	Yes	<p><b>Explanation:</b> Inventory file format. Only the CSV format is supported.</p> <p><b>Value range:</b> CSV</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
destinationBucket	String	Yes	<p><b>Explanation:</b> Name of the bucket for storing inventories.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
inventoryPrefix	String	No	<p><b>Explanation:</b> The prefix of the inventory file name.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> If you do not specify this parameter, <b>BucketInventory</b> is used as the prefix by default.</p>

Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	<p><b>Explanation:</b> Whether versions of objects are included in an inventory.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>If this parameter is set to <b>All</b>, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: <b>VersionId</b>, <b>IsLatest</b>, and <b>DeleteMarker</b>.</li> <li>If this parameter is set to <b>Current</b>, the inventory only lists information about the current object version and does not include any version-related fields.</li> </ul> <p><b>Default value:</b> None</p>
optionalFields	ArrayList<String>	No	<p><b>Explanation:</b> Additional object metadata fields that are contained in an inventory file.</p> <p><b>Value range:</b></p> <p><b>Size:</b> Object size.</p> <p><b>LastModifiedDate:</b> Last time when the object was modified.</p> <p><b>StorageClass:</b> The storage class of the object.</p> <p><b>ETag:</b> The ETag value of the object.</p> <p><b>IsMultipartUploaded:</b> Whether the object was uploaded in a <b>multipart upload</b>.</p> <p><b>ReplicationStatus:</b> The cross-region replication status of the object.</p> <p><b>EncryptionStatus:</b> The encryption status of the object.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example lists all inventory files of bucket **example-bucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.inventory.InventoryConfiguration;
import com.obs.services.model.inventory.ListInventoryConfigurationRequest;
import com.obs.services.model.inventory.ListInventoryConfigurationResult;
import java.util.List;
public class ListInventoryConfigurations001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the following parameters.
            String exampleBucketName = "example-bucket";
            ListInventoryConfigurationRequest request = new
ListInventoryConfigurationRequest(exampleBucketName);
            // List all inventory rules.
            ListInventoryConfigurationResult result = obsClient.listInventoryConfiguration(request);
            List<InventoryConfiguration> inventoryConfigurations = result.getInventoryConfigurations();
            //Print all parameters in all inventory rules.
            for (InventoryConfiguration inventoryConfiguration : inventoryConfigurations) {
                System.out.println("ConfigurationId:" + inventoryConfiguration.getConfigurationId());
                System.out.println("DestinationBucket:" + inventoryConfiguration.getDestinationBucket());
                System.out.println("InventoryFormat:" + inventoryConfiguration.getInventoryFormat());
                System.out.println("Enabled:" + inventoryConfiguration.getEnabled());
                System.out.println("Frequency:" + inventoryConfiguration.getFrequency());
                System.out.println("IncludedObjectVersions:" +
inventoryConfiguration.getIncludedObjectVersions());
                System.out.println("InventoryPrefix:" + inventoryConfiguration.getInventoryPrefix());
                System.out.println("ObjectPrefix:" + inventoryConfiguration.getObjectPrefix());
                System.out.println("OptionalFields:" + inventoryConfiguration.getOptionalFields());
                System.out.println("-----");
            }
            // Print the HTTP status code.
            System.out.println("HTTP Code: " + result.getStatusCode());
            System.out.println("ListInventoryConfiguration succeeded");
        } catch (ObsException e) {
            System.out.println("ListInventoryConfiguration failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code: " + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
        } catch (Exception e) {
            System.out.println("ListInventoryConfiguration failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

```
}  
}
```

## Helpful Links

- [Listing Bucket Inventory Configurations](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

## 7.17.4 Deleting an Inventory Rule (SDK for Java)

### Function

This API deletes an inventory rule (identified by **configurationId**) from the bucket.

### Restrictions

- To delete a bucket inventory rule, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucketInventoryConfiguration** in IAM or **DeleteBucketInventoryConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.deleteInventoryConfiguration([DeleteInventoryConfigurationRequest request](#))

## Request Parameters

**Table 7-86** DeleteInventoryConfigurationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
configurationId	String	Yes	<p><b>Explanation:</b> ID of the inventory rule to be deleted. The ID can be up to 64 bytes long and allows letters (a-z, A-Z), digits (0-9), hyphens (-), underscores (_), and periods (.).</p> <p><b>Default value:</b> None</p>

## Responses

**Table 7-87** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example deletes the inventory rule whose ID is **exampleConfigId001** for bucket **example-bucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HeaderResponse;
import com.obs.services.model.inventory.DeleteInventoryConfigurationRequest;
import com.obs.services.model.inventory.GetInventoryConfigurationRequest;
import com.obs.services.model.inventory.GetInventoryConfigurationResult;
import com.obs.services.model.inventory.InventoryConfiguration;
public class DeleteInventoryConfiguration001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");
```



```
// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the following parameters.
    String exampleBucketName = "example-bucket";
    String exampleConfigurationId = "exampleConfigId001";
    DeleteInventoryConfigurationRequest request =
        new DeleteInventoryConfigurationRequest(exampleBucketName, exampleConfigurationId);
    // Delete the inventory rule.
    HeaderResponse result = obsClient.deleteInventoryConfiguration(request);
    // Print the HTTP status code.
    System.out.println("HTTP Code: " + result.getStatusCode());
    System.out.println("DeleteInventoryConfiguration succeeded");
} catch (ObsException e) {
    System.out.println("DeleteInventoryConfiguration failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code: " + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("DeleteInventoryConfiguration failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting Bucket Inventory Configurations](#)
- [OBS Error Codes](#)
- [FAQ for Buckets and Objects](#)

# 8 Object Upload (SDK for Java)

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## 8.1 Overview (SDK for Java)

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### NOTICE

If you have any questions during development, post them on the [Issues](#) page of GitHub.

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In OBS, objects are basic data units that users can perform operations on. OBS Java SDK provides abundant APIs for object upload in the following methods:

- [Streaming](#)
- [File-based](#)
- [Multipart](#)
- [Appendable](#)
- [Resumable](#)
- [Browser-based](#)

The SDK supports the upload of objects whose size ranges from 0 KB to 5 GB. For streaming upload, appendable upload, and file-based upload, data to be uploaded cannot be larger than 5 GB. If the file is larger than 5 GB, multipart upload (where each part is smaller than 5 GB) is suitable. Browser-based upload allows files to be uploaded through a browser.

If you grant anonymous users the read permission for an object during the upload, anonymous users can access the object through a URL after the upload is complete. The object URL is in the format of **`https://bucket name.domain name/directory level/object name`**. If the object resides in the root directory of the bucket, its URL does not contain directory levels.

## 8.2 Uploading an Object - Streaming (SDK for Java)

### Function

This API uploads a local file to OBS over the Internet. These files can be texts, images, videos, or any other type of files.

You can upload texts, images, videos, or any other types of files smaller than 5 GB. In a streaming upload, `java.io.InputStream` is used as the object data source. You can call `ObsClient.putObject` to upload data streams to OBS.

### Restrictions

- To upload an object, you must be the bucket owner or have the required permission (`obs:object:PutObject` in IAM or `PutObject` in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- The object size in a single upload ranges from 0 to 5 GB.
- To upload files larger than 5 GB, refer to [Multipart Upload \(SDK for Java\)](#).
- To upload a local file, you are advised to use a file-based upload. For details, see [Uploading an Object - File-Based \(SDK for Java\)](#).

### Method

`obsClient.putObject(PutObjectRequest request)`

### Request Parameters

**Table 8-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PutObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 8-2</a> .

**Table 8-2** PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-4</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> ACL that can be pre-defined when an object is created. Refer to <a href="#">Table 8-6</a> to choose the option you need. For details about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-3</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-6</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<b>Explanation:</b> Information about the server-side encryption header. For details, see <a href="#">Table 8-14</a> . <b>Default value:</b> None
sseCHeader	<a href="#">SseCHeader</a>	No	<b>Explanation:</b> Information about the server-side encryption header. For details, see <a href="#">Table 8-13</a> . <b>Default value:</b> None
input	java.io.InputStream	No	<b>Explanation:</b> Data stream of the object to be uploaded. <b>Default value:</b> None
file	java.io.File	No	<b>Explanation:</b> File stream of the object to be uploaded. <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<ExtensionObjectPermissionEnum, Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <b>ExtensionObjectPermissionEnum</b> specifies the permissions to grant, and <b>Set&lt;String&gt;</b> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 8-5</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b> This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call.</p> <p><b>Value range:</b> An integer greater than 0, in days</p> <p><b>Default value:</b> None</p>
progressListener	ProgressListener	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-18</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 8-3** ACL

Constant	Description
AccessControllist.REST_CANNED_PRIVATE	<p>Private read/write. A bucket or object can only be accessed by its owner.</p>
AccessControllist.REST_CANNED_PUBLIC_READ	<p>Public read. If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket. If this permission is granted on an object, anyone can read the content and metadata of the object.</p>



Constant	Description
<p>AccessControlList.REST_CANNED_PUBLIC_READ_WRITE</p>	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
<p>AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED</p>	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
<p>AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED</p>	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-4** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Size of the object.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> Multipurpose Internet Mail Extensions (MIME) type of the object to be uploaded. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Object storage class that can be specified at object creation. If this parameter is not specified, the object inherits the storage class of the bucket where it is to be uploaded by default.</p> <p><b>Value range:</b> See <a href="#">Table 8-21</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-5** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-6** AccessControlList

Parameter	Type	Mandator y (Yes/No)	Type
owner	<a href="#">Owner</a>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-11</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-7</a> .

**Table 8-7** GrantAndPermission

Parameter	Type	Mandator y (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-8</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 8-12</a> . <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 8-8** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-9</a>.</p>
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 8-10</a>.</p> <p><b>Default value:</b> None</p>



**Table 8-9** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-10** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 8-11** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-12** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>

Constant	Default Value	Description
PERMISSION_READ_ACL	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-13** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating Advanced Encryption Standard (AES) is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-17</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> AES256</p> <p><b>Value range:</b> See <a href="#">Table 8-16</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-14** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-15</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-16</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-15** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-16** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-17** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-18** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used to obtain the upload progress. For details, see <a href="#">Table 8-19</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-19** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-20</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-20** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.

Method	Return Value Type	Description
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes() ( )	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 8-21** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Responses

**Table 8-22** PutObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Description
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Object storage class. If the storage class is Standard, leave this parameter blank.</p> <p><b>Value range:</b> See <a href="#">Table 8-21</a>.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Code Example 1: Uploading a Byte Array

The following code is used to upload the **Hello OBS** character string to the **examplebucket** bucket and name it **objectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import java.io.ByteArrayInputStream;
public class PutObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Upload a string and convert it to a byte array.
            String content = "Hello OBS";
            obsClient.putObject("examplebucket", "objectname", new
            ByteArrayInputStream(content.getBytes()));
            System.out.println("putObject successfully");
        } catch (ObsException e) {
            System.out.println("putObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("putObject failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Code Example 2: Uploading a Network Stream

The following code is used to upload the **http://www.a.com** network stream to the **examplebucket** bucket and name it **objectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import java.io.InputStream;
import java.net.URL;
public class PutObject002 {
```

```
public static void main(String[] args) {
    // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
    hard coding may result in leakage.
    // Obtain an AK/SK pair on the management console.
    String ak = System.getenv("ACCESS_KEY_ID");
    String sk = System.getenv("SECRET_ACCESS_KEY_ID");
    // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
    advised not to use hard coding, which may result in information leakage.
    // Obtain an AK/SK pair and a security token using environment variables or import them in other
    ways.
    // String securityToken = System.getenv("SECURITY_TOKEN");
    // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
    with the one in your actual situation.
    String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
    // Obtain an endpoint using environment variables or import it in other ways.
    //String endPoint = System.getenv("ENDPOINT");

    // Create an ObsClient instance.
    // Use the permanent AK/SK pair to initialize the client.
    ObsClient obsClient = new ObsClient(ak, sk, endPoint);
    // Use the temporary AK/SK pair and security token to initialize the client.
    // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

    try {
        // Upload a network stream.
        InputStream inputStream = new URL("http://www.a.com").openStream();
        obsClient.putObject("examplebucket", "objectname", inputStream);
        System.out.println("putObject successfully");
    } catch (ObsException e) {
        System.out.println("putObject failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("putObject failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

### Code Example 3: Uploading a File Stream

The following code is used to upload the **localfile** file stream to the **objectname** object in the **dir** directory of **bucketname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
import java.io.FileInputStream;
public class PutObject003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        ways.
```

```
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Path of the local file to be uploaded, in which the file name must be specified.
    FileInputStream fis = new FileInputStream(new File("localfile"));
    obsClient.putObject("examplebucket", "dir/objectname", fis);
    // Path of the local file to be uploaded, in which the file name must be specified.
    FileInputStream fis2 = new FileInputStream(new File("localfile2"));
    PutObjectRequest request = new PutObjectRequest();
    request.setBucketName("examplebucket");
    request.setObjectKey("objectname2");
    request.setInput(fis2);
    obsClient.putObject(request);
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Uploading Objects - PUT.](#)
- [\(GitHub\) Sample Code for Uploading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Upload Failure](#)

## 8.3 Uploading an Object - File-Based (SDK for Java)

### Function

This API uploads local files to OBS over the Internet. The file to be uploaded can be of any type.

## Restrictions

- To upload an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- The object size in a single upload ranges from 0 to 5 GB.
- To upload files larger than 5 GB, [multipart uploads](#) should be used.

## Method

obsClient.putObject([PutObjectRequest request](#))

## Request Parameters

**Table 8-23** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PutObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 8-24</a> .

**Table 8-24** PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-41</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> ACL that can be pre-defined when an object is created. Refer to <a href="#">Table 8-34</a> to choose the option you need. For details about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-43</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-34</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-14</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-13</a>.</p> <p><b>Default value:</b> None</p>
input	java.io.InputStream	No	<p><b>Explanation:</b> Data stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
file	java.io.File	No	<p><b>Explanation:</b> File stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <a href="#">Set&lt;String&gt;</a> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 8-28</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b> This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call.</p> <p><b>Value range:</b> An integer greater than 0, in days</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">Progress Listener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-25</a>.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 8-25** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-26</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-26** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-27</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-27** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 8-28** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-29** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS used for encrypting objects.</p> <p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-31</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-32</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on DEW.</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-30** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-33</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-32</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-31** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-32** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-33** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-34** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-35</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <b>GrantAndPermission</b> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-36</a> .

**Table 8-35** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-36** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-38</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 8-37</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 8-37** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>

Constant	Default Value	Description
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-38** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-39</a>.</p>
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 8-40</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-39** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 8-40** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 8-41** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Size of the object.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object to be uploaded. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Object storage class that can be specified at object creation. If this parameter is not specified, the object inherits the storage class of the bucket where it is to be uploaded by default.</p> <p><b>Value range:</b> See <a href="#">Table 8-42</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-42** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-43** ACL

Constant	Description
AccessControllist.REST_CANNED_PRIVATE	Private read/write. A bucket or object can only be accessed by its owner.



Constant	Description
AccessControllist.REST_CAN NED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CAN NED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CAN NED_PUBLIC_READ_DELIVER ED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControllist.REST_CAN NED_PUBLIC_READ_WRITE_ DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

## Responses

**Table 8-44** PutObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 8-42</a>.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
etag	String	<p><b>Explanation:</b>                      ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b>                      If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None</p>
objectKey	String	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Code Examples

This example uploads local files to bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class PutObject004 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Upload files.
    // localfile indicates the path of the local file to be uploaded, in which the file name must be
    specified.
    PutObjectRequest request = new PutObjectRequest();
    request.setBucketName("examplebucket");
    request.setObjectKey("objectkey");
    request.setFile(new File("localfile"));
    obsClient.putObject(request);
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Uploading Objects - POST](#)
- [\(GitHub\) Sample Code for Uploading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Upload Failure](#)

## 8.4 Obtaining the Upload Progress (SDK for Java)

### Function

This API returns the upload progress of a specified object.

You can call `PutObjectRequest.setProgressListener` to obtain the upload progress.

---

#### NOTICE

If you have any questions during development, post them on the [Issues](#) page of GitHub.

---

## Restrictions

- To obtain the upload progress, you must have the **obs:object:PutObject** permission. For details about permission granting, see [Typical Permission Control Scenarios](#).
- You can query the upload progress when uploading an object in streaming, file-based, multipart, appendable, or resumable mode.
- If the value of **ProgressStatus.getTransferPercentage()** is **-1**, the content is uploaded in streaming mode. In this case, you must configure the **Content-Length** parameter.

## Method

PutObjectRequest.setProgressListener([ProgressListener progressListener](#))

## Request parameters

**Table 8-45** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">Progress Listener</a>	Yes	<b>Explanation:</b> Data transmission listener for obtaining the upload progress. For details, see <a href="#">Table 8-46</a> .

**Table 8-46** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-47</a> .

**Table 8-47** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-48</a> .

**Table 8-48** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

## Code Examples

This example returns the progress of uploading local file **exampleLocalFilePath** to bucket **examplebucket** as object **objectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ProgressListener;
import com.obs.services.model.ProgressStatus;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class PutObject005 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
```

```
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Upload a file.
    PutObjectRequest request = new PutObjectRequest("examplebucket", "exampleobject");
    request.setFile(new File("exampleLocalFilePath"));
    request.setProgressListener(
        new ProgressListener() {
            @Override
            public void progressChanged(ProgressStatus status) {
                // Obtain the average upload rate.
                System.out.println("AverageSpeed:" + status.getAverageSpeed());
                // Obtain the upload progress in percentage.
                System.out.println("TransferPercentage:" + status.getTransferPercentage());
            }
        }
    );
    // Refresh the upload progress each time 1 MB data is uploaded.
    request.setProgressInterval(1024 * 1024L);
    obsClient.putObject(request);
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [\(GitHub\) Sample Code for Uploading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Upload Failure](#)

## 8.5 Creating a Folder (SDK for Java)

### Function

This API creates a folder in an existing bucket to manage data in OBS.

OBS does not involve folders like in a file system. All elements in buckets are objects. To create a folder in OBS is essentially to create an object whose size is 0



and whose name ends with a slash (/). Such objects are no different from other objects (you can perform normal operations on them such as download and delete), except that they are displayed as folders in OBS console.

## Restrictions

- To create a folder, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- To create a multi-level folder, you only need to create the folder with the last level. For example, if you want to create a folder named **src1/src2/src3/**, create it directly. You do not need to create folders **src1/** and **src1/src2/** first.

## Method

obsClient.putObject([PutObjectRequest request](#))

## Request Parameters

**Table 8-49** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PutObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 8-50</a> .

**Table 8-50** PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-62</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> ACL that can be pre-defined when an object is created. Refer to <a href="#">Table 8-63</a> to choose the option you need. For details about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-51</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-63</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-14</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-13</a>.</p> <p><b>Default value:</b> None</p>
input	java.io.InputStream	No	<p><b>Explanation:</b> Data stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
file	java.io.File	No	<p><b>Explanation:</b> File stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <a href="#">Set&lt;String&gt;</a> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 8-55</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Man dato ry (Yes /No)	Description
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b> This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call.</p> <p><b>Value range:</b> An integer greater than 0, in days</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">Progress Listener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-52</a>.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 8-51** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-52** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-53</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-53** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-54</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-54** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 8-55** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-56** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-58</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-60</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-57** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-59</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-60</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on DEW.</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-58** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-59** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-60** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-61** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-62** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Size of the object.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object to be uploaded. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Man dator y (Yes/ No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <code>n58IG6hfM7vqI4K0vnWpog==</code></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
storageClasses	StorageClassEnum	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 8-61</a>.</p> <p><b>Default value:</b> None</p>
websiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-63** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-64</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-65</a> .

**Table 8-64** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None



Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-65** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-67</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 8-66</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 8-66** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>

Constant	Default Value	Description
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-67** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<b>CanonicalGrantee</b>	<b>CanonicalGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-68</a>.</p>
<b>GroupGrantee</b>	<b>GroupGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 8-69</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-68** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-69** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

## Responses

**Table 8-70** PutObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 8-21</a>.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Code Examples

This example uses the object upload operation to create folder **parent\_directory/** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import java.io.ByteArrayInputStream;
public class PutObject006 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
```

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Create a folder.
    final String keySuffixWithSlash = "parent_directory/";
    obsClient.putObject("examplebucket", keySuffixWithSlash, new ByteArrayInputStream(new
byte[0]));
    // Create an object in the folder.
    obsClient.putObject(
        "examplebucket", keySuffixWithSlash + "objectname", new ByteArrayInputStream("Hello
OBS".getBytes()));
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- To create a folder in OBS by this API is essentially to create an object whose size is 0 and whose name ends with a slash (/).
- [\(GitHub\) Sample Code for Creating a Folder](#)
- [OBS Error Codes](#)

## 8.6 Configuring Object Metadata (SDK for Java)

### Function

This API configures metadata for an object when uploading it. Object metadata include the object length, MIME type, MD5 value (for verification), storage class, and custom object metadata. You can configure metadata for an object that is being uploaded in streaming, file-based, or multipart mode or when copying an object.

### Restrictions

- To configure the metadata of an object when uploading it, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM)



or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).

- An object can have multiple pieces of metadata. The metadata size cannot exceed 8 KB in total.
- Currently, metadata names cannot contain non-ASCII characters. If such characters are contained in a metadata value, the value must be Base64-encoded.

## Method

obsClient.putObject([PutObjectRequest request](#))

## Request Parameters

Table 8-71 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PutObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 8-72</a> .

**Table 8-72** PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-84</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> ACL that can be pre-defined when an object is created. Refer to <a href="#">Table 8-85</a> to choose the option you need. For details about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-73</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-85</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-79</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-78</a>.</p> <p><b>Default value:</b> None</p>
input	java.io.InputStream	No	<p><b>Explanation:</b> Data stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
file	java.io.File	No	<p><b>Explanation:</b> File stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <a href="#">Set&lt;String&gt;</a> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 8-77</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b> This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call.</p> <p><b>Value range:</b> An integer greater than 0, in days.</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">Progress Listener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-74</a>.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 8-73** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-74** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-75</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-75** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-76</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-76** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 8-77** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-78** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-80</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-82</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-79** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-81</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-82</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyld	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-80** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-81** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-82** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-83** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-84** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the file.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Man dator y (Yes/ No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the file.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
storageClasses	StorageClassEnum	No	<p><b>Explanation:</b> Object storage class that can be specified at object creation. If this parameter is not specified, the object inherits the storage class of the bucket where it is to be uploaded by default.</p> <p><b>Value range:</b> See <a href="#">Table 8-83</a>.</p> <p><b>Default value:</b> None</p>
websiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>An object can have multiple pieces of metadata. The metadata size cannot exceed 8 KB in total.</li> <li>When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-85** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-86</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-87</a>.</p>

**Table 8-86** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>



**Table 8-87** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-89</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 8-88</a> . <b>Default value:</b> None
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>

**Table 8-88** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	Read permission. A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket. A grantee with this permission for an object can obtain the object content and metadata.

Constant	Default Value	Description
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-89** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-90</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 8-91</a> . <b>Default value:</b> None

**Table 8-90** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 8-91** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

## Responses

**Table 8-92** PutObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Object storage class that can be specified at object creation. If this parameter is not specified, the object inherits the storage class of the bucket where it is to be uploaded by default.</p> <p><b>Value range:</b> See <a href="#">Table 8-83</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An uploaded object or copied object has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Code Example: Setting the Length for an Object

This example uploads local file **localfile** to bucket **examplebucket** as object **objectname** and sets its length to **1024 \* 1024L**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import java.io.File;
import java.io.IOException;
public class PutObject007 {
    public static void main(String[] args) throws IOException {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
```

```
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the length for an object.
    ObjectMetadata metadata = new ObjectMetadata();
    metadata.setContentLength(1024 * 1024L); // 1MB
    obsClient.putObject("examplebucket", "objectname", new File("localfile"), metadata);
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Setting the MIME Type for an Object

This example uploads local file **localimage.jpg** to bucket **examplebucket** as object **objectname.jpg** and sets the MIME type of the object to **image/jpeg**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import java.io.File;
public class PutObject008 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
```

```
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the MIME type for an object.
    // Upload an image.
    ObjectMetadata metadata = new ObjectMetadata();
    metadata.setContentType("image/jpeg");
    obsClient.putObject("examplebucket", "objectname.jpg", new File("localimage.jpg"), metadata);
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Setting the MD5 Value for an Object

This example uploads local file **localimage.jpg** to bucket **examplebucket** as object **objectname** and calls **ObsClient.base64Md5** to calculate the **Content-MD5** header.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import java.io.File;
import java.nio.file.Files;
import java.nio.file.Paths;
public class PutObject009 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the MD5 value for an object.
            // Upload an image.
```



```
ObjectMetadata metadata = new ObjectMetadata();
// Your file's Base64-encoded MD5
String base64Md5 = obsClient.base64Md5(Files.newInputStream(Paths.get("localimage.jpg")));
metadata.setContentMd5(base64Md5);
obsClient.putObject("examplebucket", "objectname", new File("localimage.jpg"), metadata);
System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Customizing Metadata for an Object

This example uploads local file **localfile** to object **objectname** in bucket **examplebucket**, customizes two pieces of metadata named **property1** and **property2**, and sets their respective values to **property-value1** and **property-value2**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import java.io.File;
public class PutObject011 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set user-defined metadata for the object.
            ObjectMetadata metadata = new ObjectMetadata();
            metadata.addUserMetadata("property1", "property-value1");
            metadata.getMetadata().put("property2", "property-value2");
            obsClient.putObject("examplebucket", "objectname", new File("localfile"), metadata);
            System.out.println("putObject successfully");
        }
    }
}
```

```
    } catch (ObsException e) {
        System.out.println("putObject failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("putObject failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Setting the Storage Class for an Object

This example uploads local file **localfile** to bucket **exampleBucket** as object **objectname** and configures the object storage class to Infrequent Access.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.StorageClassEnum;
import java.io.File;
public class PutObject010 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the storage class for an object.
            ObjectMetadata metadata = new ObjectMetadata();
            // Set the storage class of the object to Infrequent Access.
            metadata.setObjectStorageClass(StorageClassEnum.WARM);
            obsClient.putObject("examplebucket", "objectname", new File("localfile"), metadata);
            System.out.println("putObject successfully");
        } catch (ObsException e) {
            System.out.println("putObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
        }
    }
}
```

```
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [\(GitHub\) Sample Code for Configuring Object Metadata](#)
- [OBS Error Codes](#)

# 8.7 Multipart Upload (SDK for Java)

## 8.7.1 Multipart Upload Overview (SDK for Java)

### Function

You can upload large files using multipart upload. Multipart upload is applicable to many scenarios, including:

- Files to be uploaded are larger than 100 MB.
- The network condition is poor. Connection to the OBS server is constantly down.
- Sizes of files to be uploaded are uncertain.

A multipart upload has the following advantages:

- Higher throughput: You can upload parts in parallel to improve throughput.
- Quick recovery from network failures: Uploading an object in parts helps minimize the impact of upload interruptions caused by network failures.
- Flexible suspension and resumption of object uploads: You can upload parts at any time. A multipart upload will not expire after being initiated. You must explicitly complete or abort a multipart upload.
- No need to know the size before uploading an object: You can upload an object while creating it.

A multipart upload consists of the following steps:

- Step 1** [Initiate a multipart upload](#) (`ObsClient.initiateMultipartUpload`).
- Step 2** [Upload parts one by one or concurrently](#) (`ObsClient.uploadPart`).
- Step 3** [Assemble parts](#) (`ObsClient.completeMultipartUpload`) or [abort the multipart upload](#) (`ObsClient.abortMultipartUpload`).

----End

## 8.7.2 Initiating a Multipart Upload (SDK for Java)

### Function

This API initiates a multipart upload and returns a globally unique upload ID. You can use this upload ID in your subsequent requests including **abortMultipartUpload**, **listMultipartUploads**, and **listParts**.

### Restrictions

- To initiate a multipart upload, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- After initiating a multipart upload and uploading one or more parts, you must assemble the parts or abort the multipart upload.

### Method

obsClient.initiateMultipartUpload([InitiateMultipartUploadRequest request](#))

### Request Parameters

Table 8-93 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">InitiateMultipartUploadRequest</a>	Yes	<b>Explanation:</b> Request parameters for initiating a multipart upload. For details, see <a href="#">Table 8-94</a> .

**Table 8-94** InitiateMultipartUploadRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-103</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-95</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-104</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-98</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-97</a>.</p> <p><b>Default value:</b> None</p>
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <b>Set&lt;String&gt;</b> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• For details about the available permissions, see <a href="#">Table 8-96</a>.</li> <li>• To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	<p><b>Explanation:</b>                      Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b>                      This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call after the object has been uploaded.</p> <p><b>Value range:</b>                      An integer greater than 0, in days.</p> <p><b>Default value:</b>                      None</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b>                      Whether to enable OBS to automatically encode request headers.</p> <p>Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b>  <b>true:</b> Encoding with SDK is enabled.  <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b>                      true</p>



**Table 8-95** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-96** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-97** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-99</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-101</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-98** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for server-side encryption. Objects are encrypted using SSE-KMS on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-100</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-101</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyld	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-99** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-100** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-101** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-102** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-103** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the file.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b>            Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b>            None</p>
expires	String	No	<p><b>Explanation:</b>            The time a cached web page object expires.</p> <p><b>Restrictions:</b>            The time must be in the GMT format.</p> <p><b>Default value:</b>            None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b>            Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b>            See <a href="#">Table 8-102</a>.</p> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>An object can have multiple pieces of metadata. The metadata size cannot exceed 8 KB in total.</li> <li>When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-104** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-105</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-106</a>.</p>

**Table 8-105** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-106** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-108</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 8-107</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 8-107** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACL	READ_ACL	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACL	WRITE_ACL	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>

Constant	Default Value	Description
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-108** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<b>CanonicalGrantee</b>	<b>CanonicalGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-109</a>.</p>
<b>GroupGrantee</b>	<b>GroupGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 8-110</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-109** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-110** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

## List of returned results

**Table 8-111** InitiateMultipartUploadResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
uploadId	String	<p><b>Explanation:</b> The ID created by the OBS server to identify the multipart upload globally.</p> <p><b>Value range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Name of the bucket involved in the multipart upload.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• A bucket name must be unique across all accounts and regions.</li><li>• A bucket name:<ul style="list-style-type: none"><li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li><li>- Cannot be formatted as an IP address.</li><li>- Cannot start or end with a hyphen (-) or period (.).</li><li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li><li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li></ul></li><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>



Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Name of the object to be uploaded. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example initiates a multipart upload for object **objectname** in bucket **examplebucket** and obtains the upload ID.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.InitiateMultipartUploadRequest;
import com.obs.services.model.InitiateMultipartUploadResult;
import com.obs.services.model.ObjectMetadata;
public class InitiateMultipartUpload001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
```

```
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    InitiateMultipartUploadRequest request = new InitiateMultipartUploadRequest("examplebucket",
"objectname");
    ObjectMetadata metadata = new ObjectMetadata();
    metadata.addUserMetadata("property", "property-value");
    metadata.setContentType("text/plain");
    request.setMetadata(metadata);
    InitiateMultipartUploadResult result = obsClient.initiateMultipartUpload(request);
    String uploadId = result.getUploadId();
    System.out.println("initiateMultipartUpload successfully");
    System.out.println("uploadId:" + uploadId);
} catch (ObsException e) {
    System.out.println("initiateMultipartUpload failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("initiateMultipartUpload failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Initiating a Multipart Upload](#)
- [\(GitHub\) Sample Code for Multipart Uploads](#)
- [OBS Error Codes](#)

## 8.7.3 Uploading a Part (SDK for Java)

### Function

After a multipart upload is initiated, this API uploads a part to a specified bucket. In the upload request, the multipart upload ID must be included. Except for the part lastly being uploaded whose size ranges from 0 to 5 GB, sizes of the other parts range from 100 KB to 5 GB. Part numbers can be any number from 1 to 10,000.

When uploading a part, you must specify its upload ID and part number. A part number uniquely identifies a part and its position in the object you are uploading. If you upload a new part with the same part number as that of a previous part, the previously uploaded part will be overwritten. Whenever you upload a part, OBS returns the ETag header in the response. For each part upload task, you must record the part number and ETag value. These values are required in subsequent requests for you to complete a multipart upload.

### Restrictions

- To upload a part, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy).

For details, see [Introduction to OBS Access Control, IAM Custom Policies, and Configuring an Object Policy](#).

- After initiating a multipart upload and uploading one or more parts, you must assemble the parts or abort the multipart upload.
- **partNumber** in a multipart upload must be unique. When the same **partNumber** of the same object is concurrently uploaded, last write wins policy is applied. The time of last write is defined as the time when the part metadata is created. To ensure data accuracy, the client must be locked to ensure concurrent uploads of the same part of the same object. Concurrent uploads for different parts of the same object do not need to be locked.

## Method

obsClient.uploadPart([UploadPartRequest request](#))

## Request Parameters

**Table 8-112** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">UploadPartRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading a part. For details, see <a href="#">Table 8-113</a> .

**Table 8-113** UploadPartRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
partNumber	int	Yes	<p><b>Explanation:</b> Part number.</p> <p><b>Value range:</b> The value ranges from 1 to 10000. If a part number is not within the range, OBS returns error code <b>400 Bad Request</b>.</p> <p><b>Default value:</b> None</p>
uploadId	String	Yes	<p><b>Explanation:</b> Multipart upload ID, which can be returned by <b>initiating a multipart upload</b>, for example, <b>000001648453845DBB78F2340D460D8</b>.</p> <p><b>Restrictions:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
input	java.io.InputStream	No	<p><b>Explanation:</b> Data stream of the object to be uploaded.</p> <p><b>Restrictions:</b> You must specify either <b>file</b> or <b>input</b>.</p> <p><b>Default value:</b> None</p>
file	java.io.File	No	<p><b>Explanation:</b> File stream of the object to be uploaded.</p> <p><b>Restrictions:</b> You must specify either <b>file</b> or <b>input</b>. If one of the two parameters is left blank, the other must be specified.</p> <p><b>Default value:</b> None</p>
offset	long	No	<p><b>Explanation:</b> Start offset of a part in the source file.</p> <p><b>Value range:</b> A non-negative integer not exceeding the size of the object to be uploaded, in bytes.</p> <p><b>Default value:</b> 0</p>

Parameter	Type	Mandatory (Yes/No)	Description
partSize	Long	No	<p><b>Explanation:</b> Part size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• Except the part last uploaded, each of the other parts must be larger than 100 KB. The size of each part is not verified during its upload, because the system cannot define whether it is the last part. The part size is verified when the parts are assembled.</li> <li>• The minimum part size supported by an OBS 3.0 bucket is 100 KB, and that supported by an OBS 2.0 bucket is 5 MB.</li> </ul> <p><b>Value range:</b> The value ranges from 100 KB to 5 GB, in bytes.</p> <p><b>Default value:</b> 102400</p>
sseCHeader	SseCHeader	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-114</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
attachMd5	boolean	No	<p><b>Explanation:</b>                      Whether to automatically calculate the MD5 value of the data to be uploaded. To ensure data integrity, set <b>UploadPartRequest.setAttachMd5</b> to <b>true</b> to make the SDK automatically calculate the MD5 value (valid only when the data source is a local file) of each part and add the MD5 value to the <b>Content-MD5</b> request header. The OBS server will calculate the MD5 value of the uploaded data and compare it with the MD5 value calculated by the SDK.</p> <p><b>Restrictions:</b>                      If <b>attachMd5</b> and <b>contentMd5</b> are used at the same time, <b>attachMd5</b> is ignored.</p> <p><b>Value range:</b>  <b>true:</b> The MD5 value of the data to be uploaded is automatically calculated.  <b>false:</b> The MD5 value of the data to be uploaded is not automatically calculated.</p> <p><b>Default value:</b>  <b>false</b></p>



Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the part to be uploaded, which uniquely identifies the content of the uploaded part and can be used to identify whether the object content is changed.</p> <p><b>Restrictions:</b> If <b>attachMd5</b> and <b>contentMd5</b> are used at the same time, <b>attachMd5</b> is ignored.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">ProgressListener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-118</a>.</p>
progressInterval	long	No	<p><b>Explanation:</b> Interval for reporting the upload progress, in bytes. For example, <b>1024 * 1024L</b> indicates that the upload progress is reported each time 1 MB data is uploaded.</p> <p><b>Default value:</b> 100 * 1024L</p>
autoClose	boolean	No	<p><b>Explanation:</b> Whether to automatically close data streams after the upload is complete.</p> <p><b>Value range:</b> <b>true:</b> The data flow is automatically closed. <b>false:</b> The data flow is not automatically closed.</p> <p><b>Default value:</b> true</p>

**Table 8-114** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-115</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-116</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-115** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-116** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-117** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-118** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-119</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-119** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-120</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-120** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

## Responses

**Table 8-121** UploadPartResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
partNumber	int	<p><b>Explanation:</b> Part number.</p> <p><b>Value range:</b> [1,10000]</p> <p><b>Default value:</b> None</p>
etag	String	<p><b>Explanation:</b> Base64-encoded, 128-bit MD5 value of a part. ETag is the unique identifier of the part contents and is used to determine whether the contents of a part are changed. For example, if the ETag value is <b>A</b> when a part is uploaded and is <b>B</b> when the part is downloaded, this indicates the contents of the part are changed. The ETag reflects changes only to the contents of a part, not its metadata. Parts created by the upload and copy operations have unique ETags after being encrypted using MD5.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example calls **obsClient.uploadPart** to upload parts to object **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PartEtag;
import com.obs.services.model.UploadPartRequest;
import com.obs.services.model.UploadPartResult;
import java.io.File;
import java.util.ArrayList;
import java.util.List;
public class UploadPart001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
```

```
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    String uploadId = "upload id from initiateMultipartUpload";
    List<PartEtag> partEtags = new ArrayList<PartEtag>();
    // Upload the first part.
    UploadPartRequest request = new UploadPartRequest("examplebucket", "objectname");
    // Set the upload ID.
    request.setUploadId(uploadId);
    // Set the part number, which ranges from 1 to 10000.
    request.setPartNumber(1);
    // Specify the large file to be uploaded.
    request.setFile(new File("localfile"));
    // Set the part size.
    request.setPartSize(5 * 1024 * 1024L);
    UploadPartResult result = obsClient.uploadPart(request);
    partEtags.add(new PartEtag(result.getEtag(), result.getPartNumber()));
    // Upload the second part.
    request = new UploadPartRequest("examplebucket", "objectname");
    // Set the upload ID.
    request.setUploadId(uploadId);
    // Set the part number.
    request.setPartNumber(2);
    // Specify the large file to be uploaded.
    request.setFile(new File("localfile"));
    // Set the offset for the second part.
    request.setOffset(5 * 1024 * 1024L);
    // Set the part size.
    request.setPartSize(5 * 1024 * 1024L);
    result = obsClient.uploadPart(request);
    partEtags.add(new PartEtag(result.getEtag(), result.getPartNumber()));
    System.out.println("uploadPart successfully");
} catch (ObsException e) {
    System.out.println("uploadPart failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("uploadPart failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Uploading a Part](#)

- [\(GitHub\) Sample Code for Multipart Uploads](#)
- [OBS Error Codes](#)

## 8.7.4 Assembling Parts (SDK for Java)

### Function

This API assembles the uploaded parts to complete the multipart upload. Before performing this operation, you cannot download the uploaded data. When assembling parts, you need to copy the additional message header information recorded during the multipart upload initiation to the object metadata. Such information is processed the same way the information in a common object upload is processed. In the case of assembling parts concurrently, last write wins is applied, but the time of last write is defined as the time when a multipart upload was initiated.

The uploaded parts occupy your storage as long as the multipart upload has not been aborted. You can assemble all or some of the uploaded parts to complete the multipart upload. Once the multipart upload is complete, the parts that are not assembled will be deleted and no longer occupy storage.

When assembling parts, OBS creates an object by putting part numbers in ascending order. If any object metadata is provided in the initiation of the multipart upload, OBS will associate the metadata with the object. After the multipart upload is complete, the parts will no longer exist. A part assembling request must contain the upload ID, part numbers, and a list of corresponding ETag values. In response to the request, the ETag that uniquely identifies the assembled parts is contained. This ETag is not the MD5 hash value of the entire object.

### Restrictions

- To assemble parts, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- After a multipart upload is complete, the uploaded parts that are not assembled will be automatically deleted and cannot be recovered. Before assembling parts, use the API for listing uploaded parts to check all parts to ensure that no part is missed.

### Method

obsClient.completeMultipartUpload([CompleteMultipartUploadRequest request](#))

## Request Parameters

**Table 8-122** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">CompleteMultipartUploadRequest</a>	Yes	<b>Explanation:</b> Request parameters for assembling parts. For details, see <a href="#">Table 8-123</a> .



**Table 8-123** CompleteMultipartUploadRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
partEtag	List<PartEtag>	Yes	<p><b>Explanation:</b> List of parts to be assembled. For details, see <a href="#">Table 8-124</a>.</p>
uploadId	String	Yes	<p><b>Explanation:</b> Multipart upload ID, for example, <b>000001648453845DBB78F2340DD460D8</b>.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encodingType	String	No	<p><b>Explanation:</b> Encoding type for <b>objectKey</b> in the response. If <b>objectKey</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>objectKey</b>.</p> <p><b>Value range:</b> <b>url</b></p> <p><b>Default value:</b> None. If you leave this parameter blank, encoding is not applied.</p>
userHeaders	HashMap <String, String>	No	<p><b>Explanation:</b> User header list. In <b>HashMap</b>, the <b>String</b> key and value indicate the name and value of the user header field respectively. The SDK does not process the <b>userHeaders</b> and instead transparently transmits it to the server for later use.</p> <p><b>Default value:</b> None</p>

Table 8-124 PartEtag

Parameter	Type	Mandatory (Yes/No)	Description
etag	String	Yes	<p><b>Explanation:</b> Part ETag. Base64-encoded, 128-bit MD5 value of the part.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
partNumber	Integer	Yes	<p><b>Explanation:</b> Part number. Part numbers can be inconsecutive.</p> <p><b>Value range:</b> An integer ranging from 1 to 10000.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 8-125** CompleteMultipartUploadResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> Base64-encoded, 128-bit MD5 value 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket in which parts are assembled.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> The name of the object the parts are assembled into.</p> <p>An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
location	String	<p><b>Explanation:</b> URL of the object the parts are assembled into.</p> <p>Example: <b>https://example-Bucket.obs.regions.myhuaweicloud.eu/example-Object.</b></p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Version ID of the object the parts are assembled into. If versioning is enabled for the bucket, the object version number will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
objectUrl	String	<p><b>Explanation:</b> Full path to the object the parts are assembled into.</p> <p><b>Default value:</b> None</p>
encodingType	String	<p><b>Explanation:</b> Encoding type for <b>objectKey</b> in the response. If <b>objectKey</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>objectKey</b>.</p> <p><b>Value range:</b> <b>url</b></p> <p><b>Default value:</b> None. If you leave this parameter blank, encoding is not applied.</p>

## Code Examples

This example calls **ObsClient.completeMultipartUpload** to assemble parts into object **objectname** in bucket **examplebucket** based on **uploadId** and **partEtags**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CompleteMultipartUploadRequest;
import com.obs.services.model.PartEtag;
```

```
import java.util.ArrayList;
import java.util.List;
public class CompleteMultipartUpload001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            String uploadId = "upload id from initiateMultipartUpload";
            List<PartEtag> partEtags = new ArrayList<PartEtag>();
            // First part
            PartEtag part1 = new PartEtag();
            part1.setPartNumber(1);
            part1.setEtag("etag1");
            partEtags.add(part1);
            // Second part
            PartEtag part2 = new PartEtag();
            part2.setPartNumber(2);
            part2.setEtag("etag2");
            partEtags.add(part2);
            CompleteMultipartUploadRequest request =
                new CompleteMultipartUploadRequest("examplebucket", "objectname", uploadId, partEtags);
            obsClient.completeMultipartUpload(request);
            System.out.println("completeMultipartUpload successfully");
        } catch (ObsException e) {
            System.out.println("CompleteMultipartUpload failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("completeMultipartUpload failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Completing a Multipart Upload](#)
- [\(GitHub\) Sample Code for Multipart Uploads](#)



- [OBS Error Codes](#)

## 8.7.5 Code Example of a Multipart Upload (SDK for Java)

Multipart upload can be used when files are too large or the network condition is poor. You can use `UploadPartRequest.setOffset` and `UploadPartRequest.setPartSize` to set the start and end positions of each part. This example uploads a large file by concurrently uploading parts.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CompleteMultipartUploadRequest;
import com.obs.services.model.InitiateMultipartUploadRequest;
import com.obs.services.model.InitiateMultipartUploadResult;
import com.obs.services.model.PartEtag;
import com.obs.services.model.UploadPartRequest;
import com.obs.services.model.UploadPartResult;
import java.io.File;
import java.util.ArrayList;
import java.util.Collections;
import java.util.List;
import java.util.concurrent.ExecutorService;
import java.util.concurrent.Executors;
import java.util.concurrent.TimeUnit;

public class ConcurrentUploadPart001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            final String bucketName = "examplebucket";
            final String objectKey = "objectname";
            // Initialize the thread pool.
            ExecutorService executorService = Executors.newFixedThreadPool(20);
            final File largeFile = new File("localfile");
            // Initiate a multipart upload.
            InitiateMultipartUploadRequest request = new InitiateMultipartUploadRequest(bucketName,
            objectKey);
            InitiateMultipartUploadResult result = obsClient.initiateMultipartUpload(request);
            final String uploadId = result.getUploadId();
            System.out.println("\t" + uploadId + "\n");
            // Set the part size to 100 MB.
            long partSize = 100 * 1024 * 1024L;
            long fileSize = largeFile.length();
            // Calculate the number of parts to be uploaded.
            long partCount = fileSize % partSize == 0 ? fileSize / partSize : fileSize / partSize + 1;
            final List<PartEtag> partEtags = Collections.synchronizedList(new ArrayList<PartEtag>());
            // Start uploading parts concurrently.
            for (int i = 0; i < partCount; i++) {
```

```
// Set the start position of a part in the file.
final long offset = i * partSize;
// Set the part size.
final long currPartSize = (i + 1 == partCount) ? fileSize - offset : partSize;
// Set the part number.
final int partNumber = i + 1;
executorService.execute(
    new Runnable() {
        @Override
        public void run() {
            UploadPartRequest uploadPartRequest = new UploadPartRequest();
            uploadPartRequest.setBucketName(bucketName);
            uploadPartRequest.setObjectKey(objectKey);
            uploadPartRequest.setUploadId(uploadId);
            uploadPartRequest.setFile(largeFile);
            uploadPartRequest.setPartSize(currPartSize);
            uploadPartRequest.setOffset(offset);
            uploadPartRequest.setPartNumber(partNumber);
            UploadPartResult uploadPartResult;
            try {
                uploadPartResult = obsClient.uploadPart(uploadPartRequest);
                System.out.println("Part#" + partNumber + " done\n");
                partEtags.add(
                    new PartEtag(uploadPartResult.getEtag(),
uploadPartResult.getPartNumber()));
            } catch (ObsException e) {
                e.printStackTrace();
            }
        }
    });
// Wait until the upload is complete.
executorService.shutdown();
while (!executorService.isTerminated()) {
    try {
        executorService.awaitTermination(5, TimeUnit.SECONDS);
    } catch (InterruptedException e) {
        e.printStackTrace();
    }
}
// Assemble parts.
CompleteMultipartUploadRequest completeMultipartUploadRequest =
    new CompleteMultipartUploadRequest(bucketName, objectKey, uploadId, partEtags);
obsClient.completeMultipartUpload(completeMultipartUploadRequest);
System.out.println("completeMultipartUpload successfully");
} catch (ObsException e) {
    System.out.println("CompleteMultipartUpload failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("completeMultipartUpload failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## 8.7.6 Aborting a Multipart Upload (SDK for Java)

### Function

This API aborts a multipart upload using the multipart upload ID.

After a multipart upload is aborted, the upload ID cannot be used to upload any part. The storage occupied by any uploaded parts will be released. If any part uploads are in progress, aborting the multipart upload might or might not make the uploads successful. To release the storage occupied by all uploaded parts, you can only abort the multipart upload after all parts have been uploaded.

### Restrictions

- To abort a multipart upload, you must be the bucket owner or have the required permission (**obs:object:AbortMultipartUpload** in IAM or **AbortMultipartUpload** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).

### Method

obsClient.abortMultipartUpload([AbortMultipartUploadRequest request](#))

### Request Parameters

Table 8-126 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">AbortMultipartUploadRequest</a>	Yes	<b>Explanation:</b> Request parameters for aborting a multipart upload. For details, see <a href="#">Table 8-127</a> .

**Table 8-127** AbortMultipartUploadRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p>Bucket name.</p> <p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>
uploadId	String	Yes	<p><b>Explanation:</b>                      Multipart upload ID, for example, <b>000001648453845DBB78F2340DD460D8</b>.</p> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None</p>

## Responses

**Table 8-128** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example calls **ObsClient.abortMultipartUpload** to abort the multipart upload of object **objectname** in bucket **examplebucket** based on the upload ID obtained during the multipart upload initiation.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AbortMultipartUploadRequest;
public class AbortMultipartUpload001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
```

```
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    String uploadId = "upload id from initiateMultipartUpload";
    // Abort the multipart upload request.
    AbortMultipartUploadRequest request = new AbortMultipartUploadRequest("examplebucket",
"objectname", uploadId);
    // Abort the multipart upload API.
    obsClient.abortMultipartUpload(request);
    System.out.println("AbortMultipartUpload successfully");
} catch (ObsException e) {
    System.out.println("AbortMultipartUpload failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("AbortMultipartUpload failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Aborting a Multipart Upload](#)
- [\(GitHub\) Sample Code for Multipart Uploads](#)
- [OBS Error Codes](#)

## 8.7.7 Listing Uploaded Parts (SDK for Java)

### Function

This API lists the uploaded parts in a specified bucket. This request must contain the multipart upload ID.

You can list the uploaded parts of a specified multipart upload or of all ongoing multipart uploads. A maximum of 1,000 uploaded parts can be returned in a response. If your multipart upload has more than 1,000 parts, you need to send multiple requests to list all uploaded parts. Assembled parts will not be listed.

### Restrictions

- To list uploaded parts, you must be the bucket owner or have the required permission (**obs:object:ListMultipartUploadParts** in IAM or **ListMultipartUploadParts** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).

### Method

obsClient.listParts([ListPartsRequest request](#))

## Request Parameters

**Table 8-129** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">ListPartsRequest</a>	Yes	<b>Explanation:</b> Request parameters for listing uploaded parts. For details, see <a href="#">Table 8-130</a> .



**Table 8-130** ListPartsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (.), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
uploadId	String	Yes	<p><b>Explanation:</b> Multipart upload ID, for example, <b>000001648453845DBB78F2340DD460D8</b>.</p> <p><b>Value range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>
maxParts	Integer	No	<p><b>Explanation:</b> Maximum number of parts that can be listed per page.</p> <p><b>Restrictions:</b> If the specified value is greater than <b>1000</b>, only 1,000 parts are returned.</p> <p><b>Value range:</b> The value ranges from <b>1</b> to <b>1000</b>.</p> <p><b>Default value:</b> <b>1000</b></p>

Parameter	Type	Mandatory (Yes/No)	Description
partNumberMarker	Integer	No	<p><b>Explanation:</b> Part number the listing starts from.</p> <p><b>Restrictions:</b> OBS lists only parts with greater numbers than that specified by this parameter.</p> <p><b>Default value:</b> None</p>
encodingType	String	No	<p><b>Explanation:</b> Encoding type for <b>key</b> in the response. If <b>key</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>key</b>.</p> <p><b>Value range:</b> <b>url</b></p> <p><b>Default value:</b> None. If you leave this parameter blank, encoding is not applied.</p>

## Responses

**Table 8-131** ListPartsResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
bucket	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
key	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
uploadId	String	<p><b>Explanation:</b> Multipart upload ID, for example, <b>000001648453845DBB78F2340DD460D8</b>.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
initiator	<b>Owner</b>	<p><b>Explanation:</b> Initiator of the multipart upload. For details, see <a href="#">Table 8-134</a>.</p> <p><b>Default value:</b> None</p>
owner	<b>Owner</b>	<p><b>Explanation:</b> Owner of the multipart upload, which is consistent with <b>initiator</b>. For details, see <a href="#">Table 8-134</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Storage class of the object to be uploaded.</p> <p><b>Value range:</b> See <a href="#">Table 8-133</a>.</p> <p><b>Default value:</b> None</p>
multipartList	List< <a href="#">Multipart</a> >	<p><b>Explanation:</b> List of uploaded parts. For details, see <a href="#">Table 8-132</a>.</p> <p><b>Default value:</b> None</p>
maxParts	Integer	<p><b>Explanation:</b> Maximum number of parts that can be listed per page, which is consistent with that set in the request.</p> <p><b>Restrictions:</b> If the specified value is greater than 1000, only 1,000 parts are returned.</p> <p><b>Value range:</b> The value ranges from 1 to 1000.</p> <p><b>Default value:</b> 1000</p>
isTruncated	boolean	<p><b>Explanation:</b> Whether all parts are returned in the response.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> Not all parts are returned.</li> <li>• <b>false:</b> All parts are returned.</li> </ul> <p><b>Default value:</b> None</p>
partNumberMarker	String	<p><b>Explanation:</b> Part number after which part listing begins, which is consistent with that set in the request.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
nextPartNumber Marker	String	<p><b>Explanation:</b> Part number to start with for the next part listing request. If only part of the uploaded parts are returned for the current request, this parameter is included in the response for setting <b>partNumberMarker</b> in the subsequent request.</p> <p><b>Default value:</b> None</p>

**Table 8-132** Multipart

Parameter	Type	Description
partNumber	Integer	<p><b>Explanation:</b> Part number.</p> <p><b>Value range:</b> An integer ranging from 1 to 10000.</p> <p><b>Default value:</b> None</p>
lastModified	Date	<p><b>Explanation:</b> Last time the part was uploaded.</p> <p><b>Default value:</b> None</p>
etag	String	<p><b>Explanation:</b> Part ETag. Base64-encoded, 128-bit MD5 value of the part.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
size	Long	<p><b>Explanation:</b> Part size.</p> <p><b>Default value:</b> None</p>

**Table 8-133** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-134** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

## Code Example: Listing Up to 1,000 Uploaded Parts

This example lists up to 1,000 parts uploaded to object **objectname** in bucket **examplebucket** based on the upload ID obtained through **initiateMultipartUpload**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListPartsRequest;
import com.obs.services.model.ListPartsResult;
import com.obs.services.model.Multipart;
public class ListParts001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
```



```
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
// advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
// ways.
String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
// with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    String uploadId = "upload id from initiateMultipartUpload";
    // List uploaded parts. uploadId is obtained from the initiateMultipartUpload API.
    ListPartsRequest request = new ListPartsRequest("examplebucket", "objectname");
    request.setUploadId(uploadId);
    ListPartsResult result = obsClient.listParts(request);
    for (Multipart part : result.getMultipartList()) {
        // Part number, specified during the upload
        System.out.println("PartNumber:" + part.getPartNumber());
        // Part size
        System.out.println("Size:" + part.getSize());
        // Part ETag
        System.out.println("Etag:" + part.getEtag());
        // Time when the part was last uploaded
        System.out.println("LastModified:" + part.getLastModified());
    }
    System.out.println("listParts successfully");
} catch (ObsException e) {
    System.out.println("listParts failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listParts failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing All Uploaded Parts

This example lists over 1,000 parts using pagination.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListPartsRequest;
import com.obs.services.model.ListPartsResult;
import com.obs.services.model.Multipart;
public class ListParts002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
    }
}
```

```
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    String uploadId = "upload id from initiateMultipartUpload";
    // List uploaded parts. uploadId is obtained from the initiateMultipartUpload API.
    ListPartsRequest request = new ListPartsRequest("examplebucket", "objectname");
    request.setUploadId(uploadId);
    ListPartsResult result;
    do {
        result = obsClient.listParts(request);
        for (Multipart part : result.getMultipartList()) {
            // Part number, specified during the upload
            System.out.println("PartNumber:" + part.getPartNumber());
            // Part size
            System.out.println("Size:" + part.getSize());
            // Part ETag
            System.out.println("Etag:" + part.getEtag());
            // Time when the part was last uploaded
            System.out.println("LastModified:" + part.getLastModified());
        }
        request.setPartNumberMarker(Integer.parseInt(result.getNextPartNumberMarker()));
    } while (result.isTruncated());
    System.out.println("listParts successfully");
} catch (ObsException e) {
    System.out.println("listParts failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listParts failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Listing Uploaded Parts](#)
- [\(GitHub\) Sample Code for Multipart Uploads](#)
- [OBS Error Codes](#)

## 8.7.8 Listing Multipart Uploads (SDK for Java)

### Function

This API lists ongoing multipart uploads.

Ongoing multipart uploads are the multipart uploads that have been initiated but have not been completed or aborted. A maximum of 1,000 multipart uploads can be returned in a response. If there are over 1,000 ongoing tasks satisfying the list criteria, you need to send more requests to query additional multipart uploads.

### Restrictions

- To list multipart uploads, you must be the bucket owner or have the required permission (**obs:bucket:ListBucketMultipartUploads** in IAM or **ListBucketMultipartUploads** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- By default, only the bucket owner and multipart upload initiator have this permission. The bucket owner can grant others the **ListBucketMultipartUploads** permission.

### Method

obsClient.listMultipartUploads([ListMultipartUploadsRequest request](#))

### Request Parameters

Table 8-135 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">ListMultipartUploadsRequest</a>	Yes	<b>Explanation:</b> Request parameters for listing multipart uploads. For details, see <a href="#">Table 8-136</a> .

**Table 8-136** ListMultipartUploadsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.)</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	No	<p><b>Explanation:</b></p> <p>Prefix that the object names in the multipart uploads to be listed must contain.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, the multipart uploads of <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> will be returned. If you leave this parameter blank, all multipart uploads in the bucket will be returned.</p> <p><b>Restrictions:</b></p> <p>The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	<p><b>Explanation:</b> Object names are grouped by this parameter, which is often used with <b>prefix</b>. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one <b>commonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>commonPrefixes</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefixes</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefixes</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>commonPrefixes</b> with <b>bbcd</b> as the prefix.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
maxUploads	Integer	No	<p><b>Explanation:</b> Maximum number of multipart uploads to list.</p> <p><b>Restrictions:</b> If the specified value is greater than <b>1000</b>, only 1,000 multipart uploads are returned.</p> <p><b>Value range:</b> An integer from <b>1</b> to <b>1000</b></p> <p><b>Default value:</b> <b>1000</b></p>

Parameter	Type	Mandatory (Yes/No)	Description
keyMarker	String	No	<p><b>Explanation:</b> Object name after which the multipart upload listing begins.</p> <p><b>Value range:</b> The value of <b>nextKeyMarker</b> in the response body of the last request.</p> <p><b>Default value:</b> None</p>
uploadIdMarker	String	No	<p><b>Explanation:</b> Upload ID after which the multipart upload listing begins.</p> <p><b>Restrictions:</b> This parameter must be used together with <b>keyMarker</b>, indicating multipart uploads with IDs greater than the specified <b>uploadIdMarker</b> for the specified <b>keyMarker</b> are listed.</p> <p><b>Value range:</b> The value of <b>nextUploadIdMarker</b> in the response body of the last request.</p> <p><b>Default value:</b> None</p>
encodingType	String	No	<p><b>Explanation:</b> Encoding type for some elements in the response. If <b>delimiter</b>, <b>keyMarker</b>, <b>prefix</b>, <b>nextKeyMarker</b>, and <b>objectKey</b> contain control characters that are not supported by the XML 1.0 standard, you can set <b>encodingType</b> to encode <b>delimiter</b>, <b>keyMarker</b>, <b>prefix</b> (including the <b>prefix</b> in <b>commonPrefixes</b>), <b>nextKeyMarker</b>, and <b>objectKey</b> in the response.</p> <p><b>Value range:</b> <b>url</b></p> <p><b>Default value:</b> None. If you leave this parameter blank, encoding is not applied.</p>

## Responses

**Table 8-137** MultipartUploadListing

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None



Parameter	Type	Description
bucket	String	<p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>
keyMarker	String	<p><b>Explanation:</b>            Object name after which the multipart upload listing begins, which is consistent with that set in the request.</p> <p><b>Value range:</b>            The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>            None</p>

Parameter	Type	Description
uploadIdMarker	String	<p><b>Explanation:</b> Upload ID after which the multipart upload listing begins, which is consistent with that set in the request.</p> <p><b>Value range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>
nextKeyMarker	String	<p><b>Explanation:</b> Object name to start with for the next multipart upload listing request. If only part of multipart uploads are returned for the current request, this parameter is included in the response for setting <b>keyMarker</b> in the subsequent request.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
nextUploadIdMarker	String	<p><b>Explanation:</b> Upload ID to start with for the next multipart upload listing request. It is used with the <b>nextKeyMarker</b> parameter. If only part of multipart uploads are returned for the current request, this parameter is included in the response for setting <b>uploadIdMarker</b> in the subsequent request.</p> <p><b>Value range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
prefix	String	<p><b>Explanation:</b> Object name prefix in multipart uploads, which is consistent with that set in the request.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, the multipart uploads of <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> will be returned. If you leave this parameter blank, all multipart uploads in the bucket will be returned.</p> <p><b>Restrictions:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
maxUploads	int	<p><b>Explanation:</b> Maximum number of listed multipart uploads, which is consistent with that set in the request.</p> <p><b>Restrictions:</b> If the specified value is greater than <b>1000</b>, only 1,000 multipart uploads are returned.</p> <p><b>Value range:</b> An integer from <b>1</b> to <b>1000</b></p> <p><b>Default value:</b> <b>1000</b></p>
truncated	boolean	<p><b>Explanation:</b> Whether all multipart uploads are returned in the response.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> Not all multipart uploads are returned.</li> <li>• <b>false:</b> All multipart uploads are returned.</li> </ul> <p><b>Default value:</b> None</p>
multipartTaskList	List< <a href="#">Multipart Upload</a> >	<p><b>Explanation:</b> List of multipart uploads. For details, see <a href="#">Table 8-138</a>.</p>

Parameter	Type	Description
delimiter	String	<p><b>Explanation:</b> A character used to group object names in multipart uploads, which is consistent with that set in the request. This parameter is often used with <b>prefix</b>. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one <b>commonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>commonPrefixes</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefixes</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefixes</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>commonPrefixes</b> with <b>bbcde</b> as the prefix.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
commonPrefixes	String[]	<p><b>Explanation:</b> List of object name prefixes grouped according to the <b>delimiter</b> parameter (if specified).</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

**Table 8-138** MultipartUpload

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
uploadId	String	<p><b>Explanation:</b> Multipart upload ID, for example, <b>000001648453845DBB78F2340DD460D8</b>.</p> <p><b>Value range:</b> The value must contain 1 to 32 characters.</p> <p><b>Default value:</b> None</p>
initiatedDate	java.util.Date	<p><b>Explanation:</b> Time when the multipart upload is initiated.</p> <p><b>Restrictions:</b> The time must be in the ISO8601 format.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClass Enum</a>	<p><b>Explanation:</b> Storage class of the object to be uploaded.</p> <p><b>Value range:</b> See <a href="#">Table 8-139</a>.</p> <p><b>Default value:</b> None</p>
initiator	<a href="#">Owner</a>	<p><b>Explanation:</b> Initiator of the multipart upload. For details, see <a href="#">Table 8-140</a>.</p>
owner	<a href="#">Owner</a>	<p><b>Explanation:</b> Owner of the multipart upload, which is consistent with <b>initiator</b>. For details, see <a href="#">Table 8-140</a>.</p>

**Table 8-139** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-140** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

## Code Example: Listing Multipart Uploads

This example lists up to 1,000 multipart uploads of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListMultipartUploadsRequest;
import com.obs.services.model.MultipartUpload;
import com.obs.services.model.MultipartUploadListing;
public class ListMultipartUploads001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
```

```
try {
    ListMultipartUploadsRequest request = new ListMultipartUploadsRequest("examplebucket");
    MultipartUploadListing result = obsClient.listMultipartUploads(request);
    for (MultipartUpload upload : result.getMultipartTaskList()) {
        System.out.println("UploadId:" + upload.getUploadId());
        System.out.println("ObjectKey:" + upload.getObjectKey());
        System.out.println("InitiatedDate:" + upload.getInitiatedDate());
    }
    System.out.println("ListMultipartUploads successfully");
} catch (ObsException e) {
    System.out.println("ListMultipartUploads failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("ListMultipartUploads failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing Multipart Uploads Using Pagination

This example lists over 1,000 multipart uploads using pagination.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListMultipartUploadsRequest;
import com.obs.services.model.MultipartUpload;
import com.obs.services.model.MultipartUploadListing;
public class ListMultipartUploads002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            ListMultipartUploadsRequest request = new ListMultipartUploadsRequest("examplebucket");
            MultipartUploadListing result;
            do {
                result = obsClient.listMultipartUploads(request);
                for (MultipartUpload upload : result.getMultipartTaskList()) {
```



```
        System.out.println("UploadId:" + upload.getUploadId());
        System.out.println("ObjectKey:" + upload.getObjectKey());
        System.out.println("InitiatedDate:" + upload.getInitiatedDate());
    }
    request.setKeyMarker(result.getNextKeyMarker());
    request.setUploadIdMarker(result.getNextUploadIdMarker());
} while (result.isTruncated());
System.out.println("ListMultipartUploads successfully");
} catch (ObsException e) {
    System.out.println("ListMultipartUploads failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("ListMultipartUploads failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Listing Initiated Multipart Uploads in a Bucket](#)
- [\(GitHub\) Sample Code for Multipart Uploads](#)
- [OBS Error Codes](#)

## 8.8 Configuring Lifecycle Rules (SDK for Java)

### Function

You can configure lifecycle rules to periodically delete objects or transition objects between storage classes. For more information, see [Lifecycle Management](#). The object expiration time set using this API takes precedence over that set in a bucket lifecycle rule.

You can also set the object expiration time when uploading an object or initiating a multipart upload.

#### NOTE

- The minimum storage duration is 30 days for Infrequent Access storage, and 90 days for Archive storage. After an object is transitioned to the Archive storage class, if it stays in this storage class for less than 90 days, you still need to pay for a full 90 days.

### Restrictions

- There is no limit on the number of lifecycle rules in a bucket, but the total size of XML descriptions about all lifecycle rules in a bucket cannot exceed 20 KB.
- A maximum of 20 lifecycle rules can be configured for a parallel file system.

- To configure a lifecycle rule for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutLifecycleConfiguration** in IAM or **PutLifecycleConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- This API only specifies the time duration in days after which an object will expire. The OBS server automatically clears expired objects.

## Method

obsClient.putObject([PutObjectRequest request](#))

## Request Parameters

**Table 8-141** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PutObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 8-142</a> .

**Table 8-142** PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-154</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-143</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-155</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-149</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-148</a>.</p> <p><b>Default value:</b> None</p>
input	java.io.InputStream	No	<p><b>Explanation:</b> Data stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
file	java.io.File	No	<p><b>Explanation:</b> File stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <a href="#">Set&lt;String&gt;</a> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 8-147</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call.</li> <li>Expired objects will be permanently deleted and cannot be recovered.</li> </ul> <p><b>Value range:</b> An integer greater than 0, in days.</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">ProgressListener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-144</a>.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 8-143** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-144** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-145</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-145** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-146</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-146** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.



**Table 8-147** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-148** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-150</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-152</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-149** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for server-side encryption. Objects are encrypted using SSE-KMS on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-151</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-152</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-150** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-151** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-152** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-153** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-154** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the file.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the file.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
storageClasses	StorageClassEnum	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 8-153</a>.</p> <p><b>Restrictions:</b></p> <p><b>Default value:</b> None</p>
websiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The metadata size cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-155** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-156</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-157</a>.</p>

**Table 8-156** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-157** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-159</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 8-158</a> . <b>Default value:</b> None
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>

**Table 8-158** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	Read permission. A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket. A grantee with this permission for an object can obtain the object content and metadata.

Constant	Default Value	Description
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-159** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-160</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 8-161</a> . <b>Default value:</b> None

**Table 8-160** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 8-161** GroupGrantee

Constant	Description
ALL_USERS	All users.

Constant	Description
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

## Responses

**Table 8-162** PutObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClass Enum</a>	<p><b>Explanation:</b> Object storage class. If the storage class is Standard, this parameter is left blank.</p> <p><b>Value range:</b> See <a href="#">Table 8-153</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version ID will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An uploaded object or copied object has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Code Examples

This example uploads **localfile** to object **objectname** in bucket **examplebucket** and sets the object expiration time to 30 days.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class PutObject012 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
```

```
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    PutObjectRequest request = new PutObjectRequest();
    request.setBucketName("examplebucket");
    request.setObjectKey("objectname");
    request.setFile(new File("localfile"));
    // When uploading an object, set the object to expire after 30 days.
    request.setExpires(30);
    obsClient.putObject(request);
    System.out.println("putObject successfully");
} catch (ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Configuring Bucket Lifecycle Rules](#)
- [OBS Error Codes](#)
- [Lifecycle Management FAQ](#)

## 8.9 Uploading an Object - Append (SDK for Java)

### Function

1. This API uploads a file or folder to an existing OBS bucket. These files can be texts, images, videos, or any other type of files.
2. The **appendObject** operation adds data to the end of an object in a specified bucket. If there is no object with the same names in the bucket, a new object is created. The latest modification time of the object is updated each time an upload is appended.
3. After an appendable upload is successful, you can call **AppendObjectResult.getNextPosition** or use the **ObsClient.getObjectMetadata** API to get the start position for next appending.



## Restrictions

- To upload an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- The size of each append upload cannot exceed 5 GB.
- A maximum of 10,000 appendable uploads can be performed on a single object. If you attempt to append more than 10,000 uploads to an object, OBS returns **409 Conflict** with an error code **ObjectNotAppendable**.
- If the object storage class is **COLD** (Archive), this API cannot be called.
- If cross-region replication is configured for a bucket, this API cannot be called.
- Objects uploaded using **ObsClient.putObject**, referred to as common objects, can overwrite objects uploaded using **ObsClient.appendObject**, referred to as appendable objects. Data cannot be appended to an appendable object anymore once the object has been overwritten by a common object.
- You can append data to an existing object only if it is appendable. Otherwise, an exception will be reported (HTTP status code **409**). To check whether an object is appendable, see [Obtaining Object Metadata \(SDK for Java\)](#).

## Method

obsClient.appendObject([AppendObjectRequest request](#))

## Request Parameters

**Table 8-163** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">AppendObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for an append upload. For details, see <a href="#">Table 8-164</a> .

**Table 8-164** AppendObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-176</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-165</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-177</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-171</a>.</p> <p><b>Restrictions:</b> If you use SSE-KMS encryption, the encryption header you configure, such as <b>x-obs-server-side-encryption</b>, only needs to be carried when the object is uploaded for the first time and no object with the same name exists in the bucket.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-170</a>.</p> <p><b>Restrictions:</b> If you use SSE-C encryption, the encryption header you configure, such as <b>x-obs-server-side-encryption</b>, must be carried in each append upload.</p> <p><b>Default value:</b> None</p>
input	java.io.InputStream	No	<p><b>Explanation:</b> Data stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>
file	java.io.File	No	<p><b>Explanation:</b> File stream of the object to be uploaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<ExtensionObjectPermissionEnum, Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <b>Set&lt;String&gt;</b> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 8-169</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b> This parameter can be configured when uploading an object or using the <b>x-obs-expires</b> header in a metadata API call.</p> <p><b>Value range:</b> An integer greater than 0, in days.</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">ProgressListener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 8-166</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
position	long	Yes	<p><b>Explanation:</b> Position where the object data is appended.</p> <p><b>Restrictions:</b> For an object to be appended, the value of <b>position</b> must be set to <b>0</b> when the object is uploaded for the first time. The value of <b>position</b> will be carried in the <b>x-obs-next-append-position</b> header of the response returned by the server when the object is successfully uploaded next time.</p> <p><b>Default value:</b> None</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers.</p> <p>Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 8-165** ACL

Constant	Description
AccessControllist.REST_CANNED_PRIVATE	Private read/write. A bucket or object can only be accessed by its owner.

Constant	Description
AccessControllist.REST_CAN NED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CAN NED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CAN NED_PUBLIC_READ_DELIVER ED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControllist.REST_CAN NED_PUBLIC_READ_WRITE_ DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-166** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-167</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-167** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-168</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-168** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.



**Table 8-169** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-170** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-172</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-174</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-171** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for server-side encryption. Objects are encrypted using SSE-KMS on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-173</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-174</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyld	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-172** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-173** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-174** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 8-175** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-176** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the file.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the file.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
storageClass	StorageClassEnum	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 8-175</a>.</p> <p><b>Default value:</b> None</p>
websiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The metadata size cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-177** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-178</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-179</a>.</p>

**Table 8-178** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-179** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-181</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 8-180</a> . <b>Default value:</b> None
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>

**Table 8-180** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	Read permission. A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket. A grantee with this permission for an object can obtain the object content and metadata.

Constant	Default Value	Description
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-181** GranteeInterface

Parameter	Description
<a href="#">CanonicalGrantee</a>	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-182</a> .
<a href="#">GroupGrantee</a>	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 8-183</a> . <b>Default value:</b> None

**Table 8-182** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 8-183** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

## Responses

**Table 8-184** AppendObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• A bucket name must be unique across all accounts and regions.</li><li>• A bucket name:<ul style="list-style-type: none"><li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li><li>– Cannot be formatted as an IP address.</li><li>– Cannot start or end with a hyphen (-) or period (.).</li><li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li><li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my-bucket</b>.</li></ul></li><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> Base64-encoded, 128-bit MD5 value of the appended content. The ETag returned for the append upload is the ETag for the appended content, not that for the entire 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An uploaded object or copied object has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClass Enum</a>	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 8-175</a>.</p> <p><b>Default value:</b> None</p>
nextPosition	long	<p><b>Explanation:</b> Position from which the next append upload starts</p> <p><b>Default value:</b> None</p>

## Code Examples

This example appends data to object **objectname** in bucket **examplebucket** by specifying an append position.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.AppendObjectRequest;
import com.obs.services.model.AppendObjectResult;
import com.obs.services.model.ObjectMetadata;
import java.io.ByteArrayInputStream;
public class AppendObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try (ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint)) {
            // Append data for the first time.
            AppendObjectRequest request = new AppendObjectRequest();
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            request.setPosition(0);
            request.setInput(new ByteArrayInputStream("Hello OBS".getBytes()));
            AppendObjectResult result = obsClient.appendObject(request);
            // Append data for the second time.
            request.setPosition(result.getNextPosition());
            request.setInput(new ByteArrayInputStream("Hello OBS Again".getBytes()));
            result = obsClient.appendObject(request);
            System.out.println("appendObject successfully");
            System.out.println("NextPosition:" + result.getNextPosition());
            System.out.println("Etag:" + result.getEtag());
            // Use the API for obtaining object metadata to get the start position for the next append.
            ObjectMetadata metadata = obsClient.getObjectMetadata("examplebucket", "objectname");
            System.out.println("NextPosition from metadata:" + metadata.getNextPosition());
        } catch (ObsException e) {
            System.out.println("appendObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("appendObject failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Appending an Object](#)



- [OBS Error Codes](#)
- [FAQ for Object Upload Failure](#)

## 8.10 Uploading an Object - Resumable (SDK for Java)

### Function

The resumable upload is an encapsulated and enhanced version of the multipart upload used for dealing with possible upload failures of large files when the network connection is unstable or a program crashes. This API splits the file into multiple parts and uploads them individually. The upload result of each part is recorded in a checkpoint file in real time. A success message is returned only when all parts are uploaded. If any parts fail, an error message is returned telling you to call the API again to upload the failed parts. Since the checkpoint file contains the progress of each part, it saves you uploading all parts again in the event of an error.

### Restrictions

- To upload an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- The file uploaded by the resumable upload API must exceed 100 KB.
- To obtain the progress of the last upload, you must enable resumable upload when you use this API.

### Method

```
obsClient.uploadFile(UploadFileRequest request)
```

### Request Parameters

Table 8-185 uploadFile

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">UploadFileRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 8-186</a> .

**Table 8-186** UploadFileRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-)</li> </ul> </li> </ul>

Parameter	Type	Mandatory (Yes/No)	Description
			<p>adjacent to each other, for example, <b>my-.bucket</b> or <b>my-.bucket</b>.</p> <ul style="list-style-type: none"><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.                      For example, if the address for accessing the object is <b>examplebucket.ocs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>
objectMetadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b>                      Object metadata. For details, see <a href="#">Table 8-198</a>.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 8-187</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 8-199</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList. REST_CANNED_PRIVATE</p>
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-193</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 8-192</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
enableCheckpoint	boolean	No	<p><b>Explanation:</b>                      Whether to enable the resumable mode.</p> <p><b>Value range:</b>  <b>true:</b> The resumable mode is enabled.  <b>false:</b> The resumable mode is disabled.</p> <p><b>Default value:</b>  <b>false</b></p>
checkpointFile	String	No	<p><b>Explanation:</b>                      Path of a file generated for recording the progress of a resumable upload. The file contains the information about parts and the upload progress.</p> <p><b>Restrictions:</b>                      This parameter is valid only for resumable uploads.</p> <p><b>Default value:</b>                      If this parameter is left blank, the progress file will be in the same directory as the local file to be uploaded.</p>

Parameter	Type	Mandatory (Yes/No)	Description
uploadFile	String	Yes	<p><b>Explanation:</b> Full path of the file or folder to be uploaded, for example, <b>aa/bb.txt</b> or <b>aa/</b>.</p> <p><b>Default value:</b> None</p>
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<p><b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <b>Set&lt;String&gt;</b> describes the list of account IDs (indicated by <b>domain_id</b>) the granted permissions apply to.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• For details about the available permissions, see <a href="#">Table 8-191</a>.</li> <li>• To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">ProgressListener</a>	No	<b>Explanation:</b> Data transmission listener, used for obtaining the upload progress. For details, see <a href="#">Table 8-188</a> .
partSize	long	No	<b>Explanation:</b> Part size. <b>Value range:</b> The value ranges from 100 KB to 5 GB, in bytes. <b>Default value:</b> 9 MB
taskNum	int	No	<b>Explanation:</b> Maximum number of files that can be uploaded concurrently in a multipart upload. <b>Value range:</b> An integer from 1 to 10000 <b>Default value:</b> 1, indicating concurrent uploads are not used.



Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	<p><b>Explanation:</b>                      Whether to enable OBS to automatically encode request headers.</p> <p>Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b>  <b>true:</b> Encoding with SDK is enabled.  <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b>                      true</p>

**Table 8-187** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	Private read/write. A bucket or object can only be accessed by its owner.

Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 8-188** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the upload progress. For details, see <a href="#">Table 8-189</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-189** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 8-190</a>.</p> <p><b>Default value:</b> None</p>

**Table 8-190** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 8-191** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 8-192** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 8-194</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-196</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 8-193** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 8-195</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 8-196</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID.domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on DEW.</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no default master key, OBS will create one and use it by default.</li> </ul>

**Table 8-194** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 8-195** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 8-196** SSEAlgorithmEnum

Constant	Default Value
KMS	kms

Constant	Default Value
AES256	AES256

**Table 8-197** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 8-198** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 8-197</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 8-199** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 8-200</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 8-201</a>.</p>

**Table 8-200** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 8-201** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 8-203</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 8-202</a> . <b>Default value:</b> None
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>

**Table 8-202** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	Read permission. A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket. A grantee with this permission for an object can obtain the object content and metadata.

Constant	Default Value	Description
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 8-203** GranteeInterface

Parameter	Description
<a href="#">CanonicalGrantee</a>	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 8-204</a> .
<a href="#">GroupGrantee</a>	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 8-205</a> . <b>Default value:</b> None

**Table 8-204** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 8-205** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

## Responses

**Table 8-206** CompleteMultipartUploadResult

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None



Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version number will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example uses the resumable method to upload **localfile** to bucket **examplebucket** as object **objectKey**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CompleteMultipartUploadResult;
import com.obs.services.model.UploadFileRequest;
public class UploadFile001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
```

```
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    UploadFileRequest request = new UploadFileRequest("examplebucket", "objectKey");
    // Configure the local file to be uploaded. localfile is the path of the file to be uploaded. You must
specify a file name with the extension.
    request.setUploadFile("localfile");
    // Set the maximum number of parts that can be concurrently uploaded.
    request.setTaskNum(5);
    // Set the part size to 10 MB.
    request.setPartSize(10 * 1024 * 1024);
    // Enable the resumable upload.
    request.setEnableCheckpoint(true);
    // Perform a resumable upload.
    CompleteMultipartUploadResult result = obsClient.uploadFile(request);
    System.out.println("UploadFile successfully");
} catch (ObsException e) {
    // If there is an exception, you can call the API again to resume the upload.
    System.out.println("UploadFile failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("UploadFile failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [OBS Error Codes](#)
- [FAQ for Object Upload Failure](#)

## 8.11 Uploading an Object - Browser-Based (SDK for Java)

### Function

This API uploads an object up to 5 GB to a specified bucket in HTML form.

You can call **ObsClient.createPostSignature** to generate request parameters for a browser-based upload.

- Step 1** Call `ObsClient.createPostSignature` to generate request parameters for authentication.
- Step 2** Prepare an HTML form.
- Step 3** Enter the request parameters in the page.
- Step 4** Select a local file and upload it in browser-based mode.

----End

 **NOTE**

There are two request parameters generated for authentication:

- **Policy**, which corresponds to the **policy** parameter in the form
- **Signature**, which corresponds to the **signature** parameter in the form

## Restrictions

- To upload an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- Values of **policy** and **signature** in the HTML form are obtained from the returned results of `ObsClient.createPostSignature`.
- During the object upload, the value of **contentType** needs to be manually changed to the corresponding **Content-Type** value.

## Method

`obsClient.createPostSignature(PostSignatureRequest request)`

**Table 8-207** createPostSignature

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PostSignatureRequest</a>	Yes	<b>Explanation:</b> Request parameters for a browser-based upload. For details, see <a href="#">Table 8-208</a> .

**Table 8-208** PostSignatureRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	No	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	No	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
requestDate	Date	No	<p><b>Explanation:</b> Time the request is initiated.</p> <p><b>Default value:</b> None</p>
expiryDate	Date	No	<p><b>Explanation:</b> Date of expiry.</p> <p><b>Default value:</b> None</p>
expires	long	No	<p><b>Explanation:</b> Validity period of authentication for a browser-based upload</p> <p><b>Value range:</b> An integer greater than 0, in seconds.</p> <p><b>Default value:</b> 300</p>

Parameter	Type	Mandatory (Yes/No)	Description
conditions	List<String>	No	<p><b>Explanation:</b> The conditions specified for the form. The SDK uses the specified value to calculate the policy and ignores the <b>formParams</b>.</p> <p><b>Default value:</b> None</p>
formParams	Map<String, Object>	No	<p><b>Explanation:</b> Form parameters in the request. <i>String</i> indicates the name of the form parameter, and <i>Object</i> indicates the value of the form parameter.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 8-209** PostSignatureResponse

Parameter	Type	Description
OriginPolicy	String	<p><b>Explanation:</b> Value of <b>Policy</b> that is not encoded by Base64. This parameter can only be used for verification. For example:</p> <pre>{"expiration":"2023-09-12T12:52:59Z","conditions":[{"content-type":"text/plain"}, {"bucket":"examplebucket"}, {"key":"example/objectname"}],}"</pre> <p><b>Default value:</b> None</p>

Parameter	Type	Description
Policy	String	<p><b>Explanation:</b> Base64-encoded value of the policy. For example: <b>eyJleHBpcmF0aW9uljoiMjAyMy0wOS0xMlQxMjo1Mjo1OVoiLCJjb25kaXRpb25zljpbeyJjb250ZW50LXR5cGUiOiJ0ZXh0L3BsYWludn0seyJidWNrZXQiOiJleGFtcGxlYnVja2V0In0seyJrZXkiOiJleGFtcGxlL29iamVjdG5hbWUifSxdfQ==</b></p> <p><b>Default value:</b> None</p>
Signature	String	<p><b>Explanation:</b> <b>signature</b> in the form. For example: <b>g0jQr4v9VWd1Q2FOFDG6LGfV9Cw=</b></p> <p><b>Default value:</b> None</p>

## Code Examples

This example generates authorization parameters for a browser-based upload.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PostSignatureRequest;
import com.obs.services.model.PostSignatureResponse;
import java.util.HashMap;
import java.util.Map;
public class PostObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
```



```
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Generate a request for a browser-based upload.
    PostSignatureRequest request = new PostSignatureRequest();
    // Set form parameters.
    Map<String, Object> formParams = new HashMap<String, Object>();
    // Set the object ACL to public-read.
    formParams.put("x-obs-acl", "public-read");
    // Set the MIME type for an object.
    formParams.put("content-type", "text/plain");
    request.setFormParams(formParams);
    // Set the validity period for the browser-based upload request, in seconds.
    request.setExpires(3600);
    PostSignatureResponse response = obsClient.createPostSignature(request);
    System.out.println("createPostSignature successfully");
    // Obtain the request parameters.
    System.out.println("Policy:" + response.getPolicy());
    System.out.println("Signature:" + response.getSignature());
} catch (ObsException e) {
    System.out.println("createPostSignature failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("createPostSignature failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

This example is an HTML form.

```
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
</head>
<body>
<form action="http://bucketname.your-endpoint/" method="post" enctype="multipart/form-data">
  Object key
  <!-- Object name -->
  <input type="text" name="key" value="objectname" />
  <p>
  ACL
  <!-- Object ACL -->
  <input type="text" name="x-obs-acl" value="public-read" />
  <p>
  Content-Type
  <!-- Object MIME type -->
  <input type="text" name="content-type" value="text/plain" />
  <p>
  <!-- Use the value returned by PostSignatureResponse.getPolicy(). -->
  <input type="hidden" name="policy" value="*** Provide your policy ***" />
  <!-- AK -->
  <input type="hidden" name="AccessKeyId" value="*** Provide your access key ***"/>
  <!-- Signature string -->
  <input type="hidden" name="signature" value="*** Provide your signature ***"/>
  <!-- If x-obs-security-token exists, remove the comment for the following line and specify the actual
  value of x-obs-security-token. -->
  <!-- <input type="hidden" name="x-obs-security-token" value="*** Provide your x-obs-security-token
```

```
***"/>-->  
  <input name="file" type="file" />  
  <input name="submit" value="Upload" type="submit" />  
</form>  
</body>  
</html>
```

## Helpful Links

- [Uploading Objects - POST](#)
- [\(GitHub\) Sample Code for Uploading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Upload Failure](#)

# 9 Object Download (SDK for Java)

## 9.1 Overview (SDK for Java)

OBS Java SDK provides abundant APIs for object download in the following methods:

- [Streaming Download](#)
- [Partial Download](#)
- [Resumable download](#)

### Request Parameters

Parameter	Type	Mandatory (Yes/No)	Description
isEncodeHeaders	boolean	No	Whether to automatically encode the request header. The default value is <b>true</b> .
userHeaders	HashMap<String, String>	No	User's header field.
ifMatchTag	String	No	Returns the object content if the object's ETag is the same as this parameter value. Otherwise, an error is reported.
ifNoneMatchTag	String	No	Returns the object content if the object's ETag is different from this parameter value. Otherwise, an error is reported.
ifModifiedSince	Date	No	Returns the object if it has been modified since the specified time; otherwise, an error is returned.

Parameter	Type	Mandatory (Yes/No)	Description
ifUnmodifiedSince	Date	No	Returns the object if it has not been modified since the specified time; otherwise, an error is returned.
rangeStart	Long	No	Start byte for a partial download.
rangeEnd	Long	No	End byte for a partial download.
replaceMetadata	ObjectReplaceMetadata	No	<b>Rewrites response headers</b> when objects are downloaded.
sseCHeader	SseCHeader	No	Information about the server-side encryption header.
versionId	String	No	Version number.

## 9.2 Downloading an Object - Streaming (SDK for Java)

### Function

When you call **ObsClient.getObject**, an instance of **ObsObject** will be returned. This instance contains the contents of the object such as its name, attributes, input stream, and which bucket it is stored in. You can perform operations on the object input stream to read the contents to a local file or memory.

### Restrictions

- To download an object, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- Objects in the Archive storage class can be downloaded only when they are restored.
- Object input streams obtained by **ObsObject.getObjectContent** must be closed explicitly. Otherwise, resource leakage occurs.

### Method

obsClient.getObject([GetObjectRequest request](#))

## Request Parameters

**Table 9-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 9-2</a> .

**Table 9-2** GetObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
rangeStart	Long	No	<p><b>Explanation:</b> Start position for object download.</p> <p><b>Value range:</b> A non-negative integer.</p> <p><b>Default value:</b> None</p>
rangeEnd	Long	No	<p><b>Explanation:</b> End position for object download.</p> <p><b>Restrictions:</b> The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
IfModifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
IfUnmodifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has not been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header. For details, see <a href="#">Table 9-7</a>.</p>
replaceMetadata	<a href="#">ObjectReplaceMetadata</a>	No	<p><b>Explanation:</b> Additional information about the object. For details, see <a href="#">Table 9-3</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">ProgressListener</a>	No	<b>Explanation:</b> Data transmission listener for obtaining the download progress. For details, see <a href="#">Table 9-4</a> .
encodeHeaders	boolean	No	<b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data. <b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled. <b>Default value:</b> true

**Table 9-3** ObjectReplaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. <b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download.</p> <p><b>Default value:</b> None</p>

**Table 9-4** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 9-5</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-5** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-6</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-6** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 9-7** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating Advanced Encryption Standard (AES) is used to encrypt the object in SSE-C. For details, see <a href="#">Table 9-9</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 9-8</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 9-8** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 9-9** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 9-10** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Explanation:</b> Account name of the owner. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 9-11** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 9-12** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b> Cache-Control header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 9-11</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b></p> <p>User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li><li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li></ul> <p><b>Default value:</b></p> <p>None</p>

## Responses

**Table 9-13** ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
owner	<b>Owner</b>	<b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 9-10</a> .
metadata	<b>ObjectMetadata</b>	<b>Explanation:</b> Object metadata. For details, see <a href="#">Table 8-4</a> .
objectContent	InputStream	<b>Explanation:</b> Object data stream. <b>Default value:</b> None

## Code Examples

This example downloads **objectname** from **examplebucket** using streaming.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObsObject;
import java.io.ByteArrayOutputStream;
import java.io.InputStream;
public class GetObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Specify the actual endpoint where the bucket is located. The endpoint for EU-Dublin is used here as
        // an example. For guidance on how to view the endpoint of a bucket, see https://
        // support.huaweicloud.com/eu/usermanual-obs/obs_03_0312.html.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Download the object using streaming.
            ObsObject obsObject = obsClient.getObject("examplebucket", "objectname");
            // Read the object content.
            System.out.println("Object content:");
            InputStream input = obsObject.getObjectContent();
            byte[] b = new byte[1024];
            ByteArrayOutputStream bos = new ByteArrayOutputStream();
            int len;
            while ((len = input.read(b)) != -1) {
                bos.write(b, 0, len);
            }
            System.out.println("getObjectContent successfully");
        }
    }
}
```

```
        System.out.println(new String(bos.toByteArray()));
        bos.close();
        input.close();
    } catch (ObsException e) {
        System.out.println("getObjectContent failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("getObjectContent failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Helpful Links

- [Downloading Objects](#)
- [\(GitHub\) Sample Code for Downloading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

## 9.3 Downloading an Object - Partial (SDK for Java)

### Function

This API downloads partial data of an object by specifying a range. If the specified range is from 0 to 1,000, data from byte 0 to byte 1,000, 1,001 bytes in total, are returned. If the specified range is invalid, the whole object is returned.

### Restrictions

- To download an object, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- Objects in the Archive storage class can be downloaded only when they are restored.
- If the specified range is invalid (for example, the start or end position is set to a negative integer, or the start position is greater than the end position), the API throws an exception. If the specified range is valid and the end position is greater than the object size, the entire object is returned.

### Method

obsClient.getObject([GetObjectRequest request](#))

## Request Parameters

**Table 9-14** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 9-15</a> .

**Table 9-15** GetObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
rangeStart	Long	No	<p><b>Explanation:</b> Start position for object download.</p> <p><b>Value range:</b> A non-negative integer.</p> <p><b>Default value:</b> None</p>
rangeEnd	Long	No	<p><b>Explanation:</b> End position for object download.</p> <p><b>Restrictions:</b> The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
IfModifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
IfUnmodifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has not been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header. For details, see <a href="#">Table 9-20</a>.</p>
replaceMetadata	<a href="#">ObjectReplaceMetadata</a>	No	<p><b>Explanation:</b> Additional information about the object. For details, see <a href="#">Table 9-16</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">ProgressListener</a>	No	<b>Explanation:</b> Data transmission listener for obtaining the download progress. For details, see <a href="#">Table 9-17</a> .
encodeHeaders	boolean	No	<b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data. <b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled. <b>Default value:</b> true

**Table 9-16** ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. <b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download.</p> <p><b>Default value:</b> None</p>

**Table 9-17** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 9-18</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-18** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-19</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-19** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 9-20** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating Advanced Encryption Standard (AES) is used to encrypt the object in SSE-C. For details, see <a href="#">Table 9-22</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 9-21</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 9-21** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 9-22** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 9-23** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 9-24** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 9-25** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b> Cache-Control header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 9-24</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

Table 9-26 ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
owner	<b>Owner</b>	<b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 9-23</a> .
metadata	<b>ObjectMetadata</b>	<b>Explanation:</b> Object metadata. For details, see <a href="#">Table 9-25</a> .
objectContent	InputStream	<b>Explanation:</b> Object data stream. <b>Default value:</b> None

## Code Examples

This example downloads part of object **objectname** in bucket **examplebucket** by specifying a range from **0l** to **1000l**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObsObject;
import java.io.InputStream;
public class GetObject002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Perform a partial download.
            GetObjectRequest request = new GetObjectRequest("examplebucket", "objectname");
            // Set the start point and end point.
            request.setRangeStart(0l);
            request.setRangeEnd(1000l);
            ObsObject obsObject = obsClient.getObject(request);
            // Read data.
            byte[] buf = new byte[1024];
            InputStream in = obsObject.getObjectContent();
            for (int n = 0; n != -1; ) {
```

```
        n = in.read(buf, 0, buf.length);
    }
    System.out.println("GetObject successfully");
    in.close();
} catch (ObsException e) {
    System.out.println("GetObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("GetObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Downloading Objects](#)
- [\(GitHub\) Sample Code for Downloading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

## 9.4 Obtaining the Download Progress (SDK for Java)

### Function

This API returns the download progress of a specified object.

You can call `GetObjectRequest.setProgressInterval` to obtain the download progress.

### Restrictions

- To obtain the download progress, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- You can obtain the download progress when downloading an object in streaming, partial, or resumable mode.

### Method

`GetObjectRequest.setProgressListener(ProgressListener progressListener)`

## Request parameters

**Table 9-27** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">Progress Listener</a>	Yes	<b>Explanation:</b> Data transmission listener used for obtaining the progress. For details, see <a href="#">Table 9-28</a> .

**Table 9-28** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 9-29</a> .

**Table 9-29** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-30</a> .

**Table 9-30** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.

Method	Return Value Type	Description
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

## Code Examples

This example returns the progress of downloading object **objectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObsObject;
import com.obs.services.model.ProgressListener;
import com.obs.services.model.ProgressStatus;
import java.io.ByteArrayOutputStream;
import java.io.InputStream;
public class GetObject003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Obtain the download progresses.
            GetObjectRequest request = new GetObjectRequest("examplebucket", "objectname");
            request.setProgressListener(
                new ProgressListener() {
                    @Override
                    public void progressChanged(ProgressStatus status) {
                        // Obtain the average download rate.
                        System.out.println("AverageSpeed:" + status.getAverageSpeed());
                    }
                }
            );
        }
    }
}
```



```
        // Obtain the download progress in percentage.
        System.out.println("TransferPercentage:" + status.getTransferPercentage());
    }
});
// Refresh the download progress each time 1 MB data is downloaded.
request.setProgressInterval(1024 * 1024L);
ObsObject obsObject = obsClient.getObject(request);
// Read the object content.
System.out.println("Object content:");
InputStream input = obsObject.getObjectContent();
byte[] b = new byte[1024];
ByteArrayOutputStream bos = new ByteArrayOutputStream();
int len;
while ((len = input.read(b)) != -1) {
    bos.write(b, 0, len);
}
System.out.println("getObjectContent successfully");
System.out.println(new String(bos.toByteArray()));
bos.close();
input.close();
} catch (ObsException e) {
    System.out.println("getObjectContent failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObjectContent failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Downloading Objects](#)
- [\(GitHub\) Sample Code for Downloading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

## 9.5 Downloading an Object - Conditional (SDK for Java)

### Function

This API returns the objects that meet one or more conditions. If there are no objects that meet the specified conditions, an error is returned.

### Restrictions

- To download an object, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).

- Objects in the Archive storage class can be downloaded only when they are restored.

## Method

obsClient.getObject([GetObjectRequest request](#))

## Request Parameters

**Table 9-31** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 9-32</a> .

**Table 9-32** GetObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• A bucket name must be unique across all accounts and regions.</li><li>• A bucket name:<ul style="list-style-type: none"><li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li><li>– Cannot be formatted as an IP address.</li><li>– Cannot start or end with a hyphen (-) or period (.).</li><li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li><li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li></ul></li><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
rangeStart	Long	No	<p><b>Explanation:</b> Start position for object download.</p> <p><b>Value range:</b> A non-negative integer.</p> <p><b>Default value:</b> None</p>
rangeEnd	Long	No	<p><b>Explanation:</b> End position for object download.</p> <p><b>Restrictions:</b> The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b></p> <ol style="list-style-type: none"> <li>1. The ETag of an object is the MD5 value of the object. Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned.</li> <li>2. If a request includes <b>If-Unmodified-Since</b> or <b>If-Match</b> and the specified condition is not met, <b>412 Precondition Failed</b> will be returned.</li> </ol> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b></p> <ol style="list-style-type: none"> <li>1. Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</li> <li>2. If a request includes <b>If-Modified-Since</b> or <b>If-None-Match</b>, and the specified condition is not met, <b>304 Not Modified</b> will be returned.</li> </ol> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
IfModifiedSince	Date	No	<p><b>Explanation:</b></p> <ol style="list-style-type: none"> <li>1. The object is returned if it has been modified since the specified time; otherwise, an error is returned.</li> <li>2. If a request includes <b>If-Modified-Since</b> or <b>If-None-Match</b>, and the specified condition is not met, <b>304 Not Modified</b> will be returned.</li> </ol> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
IfUnmodifiedSince	Date	No	<p><b>Explanation:</b></p> <ol style="list-style-type: none"> <li>The object is returned if it has not been modified since the specified time; otherwise, an error is returned.</li> <li>If a request includes <b>If-Unmodified-Since</b> or <b>If-Match</b> and the specified condition is not met, <b>412 Precondition Failed</b> will be returned.</li> </ol> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header. For details, see <a href="#">Table 9-37</a>.</p>
replaceMetadata	<a href="#">ObjectReplaceMetadata</a>	No	<p><b>Explanation:</b> Additional information about the object. For details, see <a href="#">Table 9-33</a>.</p>
progressListener	<a href="#">ProgressListener</a>	No	<p><b>Explanation:</b> Data transmission listener for obtaining the progress. For details, see <a href="#">Table 9-34</a>.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 9-33** ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> None</p>
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b>                      Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b>                      None</p>
contentEncoding	String	No	<p><b>Explanation:</b>  <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download.</p> <p><b>Default value:</b>                      None</p>

**Table 9-34** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b>                      Used for obtaining the progress. For details, see <a href="#">Table 9-35</a>.</p> <p><b>Default value:</b>                      None</p>



**Table 9-35** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-36</a> . <b>Default value:</b> None

**Table 9-36** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 9-37** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating Advanced Encryption Standard (AES) is used to encrypt the object in SSE-C. For details, see <a href="#">Table 9-39</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 9-38</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 9-38** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 9-39** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 9-40** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 9-41** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 9-42** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b> Cache-Control header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 9-41</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>



## Responses

Table 9-43 ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
owner	<b>Owner</b>	<b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 9-40</a> .
metadata	<b>ObjectMetadata</b>	<b>Explanation:</b> Object metadata. For details, see <a href="#">Table 9-42</a> .
objectContent	InputStream	<b>Explanation:</b> Object data stream. <b>Default value:</b> None

## Code Examples

This example downloads **objectname** from **examplebucket** based on a specific condition. In this example, **objectname** can be downloaded only when it is modified after 00:00:00 on January 1, 2016.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObsObject;
import java.text.SimpleDateFormat;
public class GetObject004 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Perform a conditional download.
            GetObjectRequest request = new GetObjectRequest("examplebucket", "objectname");
            request.setRangeStart(0L);
            request.setRangeEnd(1000L);
            request.setIfModifiedSince(new SimpleDateFormat("yyyy-MM-dd").parse("2016-01-01"));
            ObsObject obsObject = obsClient.getObject(request);
            System.out.println("getObject successfully");
            obsObject.getObjectContent().close();
        } catch (ObsException e) {
```

```
System.out.println("getObject failed");
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Downloading Objects](#)
- [\(GitHub\) Sample Code for Downloading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

## 9.6 Rewriting Response Headers (SDK for Java)

### Function

This API rewrites the following HTTP/HTTPS response headers when downloading an object: **Content-Type**, **Content-Language**, **Expires**, **Cache-Control**, **Content-Disposition**, and **Content-Encoding**.

### Restrictions

- To download an object, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).

### Method

obsClient.getObject([GetObjectRequest request](#))

## Request Parameters

**Table 9-44** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 9-45</a> .

**Table 9-45** GetObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
rangeStart	Long	No	<p><b>Explanation:</b> Start position for object download.</p> <p><b>Value range:</b> A non-negative integer.</p> <p><b>Default value:</b> None</p>
rangeEnd	Long	No	<p><b>Explanation:</b> End position for object download.</p> <p><b>Restrictions:</b> The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
IfModifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
IfUnmodifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has not been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header. For details, see <a href="#">Table 9-50</a>.</p>
replaceMetadata	<a href="#">ObjectReplaceMetadata</a>	No	<p><b>Explanation:</b> Additional information about the object. For details, see <a href="#">Table 9-46</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">ProgressListener</a>	No	<b>Explanation:</b> Data transmission listener for obtaining the progress. For details, see <a href="#">Table 9-47</a> .

**Table 9-46** ObjectReplaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. <b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a> <b>Default value:</b> None
contentType	String	No	<b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol. <b>Default value:</b> None
expires	String	No	<b>Explanation:</b> <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded. <b>Default value:</b> None



Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b>  <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b>            None</p>
contentDisposition	String	No	<p><b>Explanation:</b>            Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b>            None</p>
contentEncoding	String	No	<p><b>Explanation:</b>  <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download.</p> <p><b>Default value:</b>            None</p>

**Table 9-47** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b>            Used for obtaining the progress. For details, see <a href="#">Table 9-48</a>.</p> <p><b>Default value:</b>            None</p>

**Table 9-48** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-49</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-49** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 9-50** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating Advanced Encryption Standard (AES) is used to encrypt the object in SSE-C. For details, see <a href="#">Table 9-52</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 9-51</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 9-51** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 9-52** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 9-53** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 9-54** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 9-55** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b> Cache-Control header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 9-54</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

Table 9-56 ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
owner	<b>Owner</b>	<b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 9-53</a> .
metadata	<b>ObjectMetadata</b>	<b>Explanation:</b> Object metadata. For details, see <a href="#">Table 9-55</a> .
objectContent	InputStream	<b>Explanation:</b> Object data stream. <b>Default value:</b> None

## Code Examples

This example rewrites response headers and downloads object **objectname** from bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObjectReplaceMetadata;
import com.obs.services.model.ObsObject;
public class GetObject005 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Rewrite the response headers.
            GetObjectRequest request = new GetObjectRequest("examplebucket", "objectname");
            ObjectReplaceMetadata replaceMetadata = new ObjectReplaceMetadata();
            replaceMetadata.setContentType("image/jpeg");
            request.setReplaceMetadata(replaceMetadata);
            ObsObject obsObject = obsClient.getObject(request);
            System.out.println(obsObject.getMetadata().getContentType());
            System.out.println("getObject successfully");
            obsObject.getObjectContent().close();
        } catch (ObsException e) {
```

```
System.out.println("getObject failed");
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Downloading Objects](#)
- [\(GitHub\) Sample Code for Downloading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

## 9.7 Obtaining User-defined Metadata (SDK for Java)

### Function

Object metadata is a set of key-value pairs that describe the object and is used for object management.

This API returns the user-defined object metadata after the object is successfully downloaded.

### Restrictions

- To obtain object metadata, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).

### Method

obsClient.getObject([GetObjectRequest request](#))

## Request Parameters

**Table 9-57** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 9-58</a> .

**Table 9-58** GetObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
rangeStart	Long	No	<p><b>Explanation:</b> Start position for object download.</p> <p><b>Value range:</b> A non-negative integer.</p> <p><b>Default value:</b> None</p>
rangeEnd	Long	No	<p><b>Explanation:</b> End position for object download.</p> <p><b>Restrictions:</b> The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
IfModifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
IfUnmodifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has not been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header. For details, see <a href="#">Table 9-63</a>.</p>
replaceMetadata	<a href="#">ObjectReplaceMetadata</a>	No	<p><b>Explanation:</b> Additional information about the object. For details, see <a href="#">Table 9-59</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">ProgressListener</a>	No	<b>Explanation:</b> Data transmission listener for obtaining the progress. For details, see <a href="#">Table 9-60</a> .
encodeHeaders	boolean	No	<b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data. <b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled. <b>Default value:</b> true

**Table 9-59** ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. <b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download.</p> <p><b>Default value:</b> None</p>

**Table 9-60** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 9-61</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-61** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-62</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-62** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 9-63** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating Advanced Encryption Standard (AES) is used to encrypt the object in SSE-C. For details, see <a href="#">Table 9-65</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 9-64</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 9-64** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 9-65** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 9-66** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 9-67** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 9-68** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b> Cache-Control header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 9-67</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b></p> <p>User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li><li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li></ul> <p><b>Default value:</b></p> <p>None</p>

## Responses

**Table 9-69** ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
owner	<b>Owner</b>	<b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 9-66</a> .
metadata	<b>ObjectMetadata</b>	<b>Explanation:</b> Object metadata. For details, see <a href="#">Table 9-68</a> .
objectContent	InputStream	<b>Explanation:</b> Object data stream. <b>Default value:</b> None

## Code Examples

This example downloads object **objectname** from bucket **examplebucket** and returns the user-defined object metadata.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.ObsObject;
import com.obs.services.model.PutObjectRequest;
public class GetObject006 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Obtain the user-defined metadata.
            // Upload the object and customize the metadata.
            PutObjectRequest request = new PutObjectRequest("examplebucket", "objectname");
            ObjectMetadata metadata = new ObjectMetadata();
            metadata.addUserMetadata("property", "property-value");
            request.setMetadata(metadata);
            obsClient.putObject(request);
            // Download the object to obtain the object's user-defined metadata.
            GetObjectRequest request1 = new GetObjectRequest("examplebucket", "objectname");
```

```
ObsObject obsObject = obsClient.getObject(request1);
System.out.println("getObject successfully");
// Get the object metadata.
System.out.println(obsObject.getMetadata().getContentType());
// Obtain the user-defined metadata named property.
System.out.println(obsObject.getMetadata().getUserMetadata("property"));
// Obtain all user-defined metadata.
System.out.println("allUserMetadata:" + metadata.getAllMetadata());
obsObject.getObjectContent().close();
} catch (ObsException e) {
    System.out.println("getObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Querying Object Metadata](#)
- [\(GitHub\) Sample Code for Obtaining Object Metadata](#)
- [OBS Error Codes](#)
- If you have the read permission on the object, you can use [HeadObject](#) to obtain the metadata of the object.

## 9.8 Restoring an Archive Object (SDK for Java)

### Function

This API downloads an Archive object. To download such an object, you must restore it first. Archive objects can be restored in either of the following ways.

Option	Description	Value in OBS Java SDK
Expedited	Data can be restored within 1 to 5 minutes.	RestoreTierEnum.EXPEDITED
Standard	Data can be restored within 3 to 5 hours. This is the default option.	RestoreTierEnum.STANDARD

### Restrictions

- To restore an Archive object, you must be the bucket owner or have the required permission (**obs:object:RestoreObject** in IAM or **RestoreObject** in a

bucket policy.) For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).

- The object specified in `ObsClient.restoreObject` must be in the Archive storage class. Otherwise, an exception will be thrown when you call this API.

## Method

`obsClient.restoreObject(RestoreObjectRequest request)`

## Request Parameters

**Table 9-70** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">RestoreObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 9-71</a> .

**Table 9-71** RestoreObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Version ID of the Archive object to restore.</p> <p><b>Default value:</b> None. If this parameter is left blank, the latest version of the object is specified.</p>
days	int	Yes	<p><b>Explanation:</b> After an object is restored, a Standard copy of it is generated. This parameter specifies how long the Standard copy can be retained, that is, the validity period of the restored object.</p> <p><b>Restrictions:</b> The value must be a positive integer.</p> <p><b>Value range:</b> The value ranges from 1 to 30, in days.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
tier	<a href="#">RestoreTierEnum</a>	No	<p><b>Explanation:</b> The restore option, which indicates the time spent on restoring the object.</p> <p><b>Value range:</b> For details, see <a href="#">Table 9-72</a>.</p> <p><b>Default value:</b> Standard</p>

**Table 9-72** RestoreTierEnum

Constant	Default Value	Description
EXPEDITED	Expedited	Objects can be restored at an expedited speed within 1 to 5 minutes.
STANDARD	Standard	Objects can be restored at a standard speed within 3 to 5 hours.

## Responses

**Table 9-73** RestoreObjectStatus

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

## Code Examples

This example restores object **objectname** from the Archive storage class using **ObsClient.restoreObject** and downloads it using **ObsClient.getObject**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObsObject;
import com.obs.services.model.RestoreObjectRequest;
import com.obs.services.model.RestoreTierEnum;
public class GetObject007 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Download an Archive object.
            RestoreObjectRequest request = new RestoreObjectRequest();
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            request.setDays(1);
            request.setRestoreTier(RestoreTierEnum.EXPEDITED);
            obsClient.restoreObject(request);
            // Wait for the object to be restored.
            Thread.sleep(60 * 6 * 1000);
            // Download the object.
            ObsObject obsObject = obsClient.getObject("examplebucket", "objectname");
            System.out.println("getObject successfully");
            obsObject.getObjectContent().close();
        } catch (ObsException e) {
            System.out.println("getObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
        }
    }
}
```

```
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Restoring Archive Objects](#)
- [\(GitHub\) Sample Code for Restoring an Archive Object](#)
- [OBS Error Codes](#)

# 9.9 Downloading an Object - Resumable (SDK for Java)

## Function

1. Downloading large files often fails due to an unstable network or program breakdown. It is a waste of resources to download files again. Moreover, the restarted download may still fail due to an unstable network. To resolve such issues, the resumable download API splits the file to be downloaded into multiple parts and downloads them separately. The download result of each part is recorded in a checkpoint file in real time. Only when all parts are downloaded is a message indicating the download is successful returned. If any parts fail to be downloaded, a message is returned telling you to call the API again to download the failed parts. Since the checkpoint file contains the progress of all parts, it helps you avoid downloading all parts in re-downloads, so that you can enjoy a cost-effective, efficient download.
2. The resumable download API is an encapsulated and enhanced version of the API for partial download. For details about the partial download, see [Downloading an Object - Partial \(SDK for Java\)](#).
3. This API saves resources and improves efficiency upon the re-download, and speeds up the download process by concurrently downloading parts. You do not need to worry about internal service details, such as the creation and deletion of checkpoint files, division of objects, or concurrent downloads of parts.

## Restrictions

- To download an object, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).

## Method

obsClient.downloadFile([DownloadFileRequest request](#))

## Request Parameters

**Table 9-74** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">DownloadFileRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading a large object. For details, see <a href="#">Table 9-75</a> .

**Table 9-75** DownloadFileRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b>            Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>            The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>            None</p>
downloadFile	String	No	<p><b>Explanation:</b>            Full path of the local directory to which the object is downloaded.</p> <p><b>Default value:</b>            If the value of this parameter is <b>null</b>, the downloaded object is saved in the directory where the program is executed.</p>
partSize	long	No	<p><b>Explanation:</b>            Part size.</p> <p><b>Value range:</b>            The value ranges from 100 KB to 5 GB, in bytes.</p> <p><b>Default value:</b>            9 MB</p>

Parameter	Type	Mandatory (Yes/No)	Description
taskNum	int	No	<p><b>Explanation:</b> Maximum number of parts that can be downloaded concurrently in a multipart download</p> <p><b>Value range:</b> The value must be greater than 0, but not exceed the file size divided by the part size, rounded up.</p> <p><b>Default value:</b> 1, indicating concurrent downloads are not used.</p>
enableCheckpoint	boolean	No	<p><b>Explanation:</b> Whether to enable the resumable mode.</p> <p><b>Value range:</b> <b>true:</b> The resumable mode is enabled. <b>false:</b> The resumable mode is disabled.</p> <p><b>Default value:</b> <b>false</b></p>
checkpointFile	String	No	<p><b>Explanation:</b> Path of a file generated for recording the progress of a resumable download. The file contains the information about parts and the progress.</p> <p><b>Restrictions:</b> This parameter is valid only in the resumable mode.</p> <p><b>Default value:</b> If this parameter is left blank, the checkpoint file will be saved in the current directory.</p>

Parameter	Type	Mandatory (Yes/No)	Description
enableChecksum	boolean	No	<p><b>Explanation:</b> Whether to verify the file to upload. If this function is enabled, before each task restarts, the system verifies whether the file to upload is the one used during task initialization.</p> <p><b>Restrictions:</b> This parameter is valid only in the resumable mode.</p> <p><b>Value range:</b> <b>true:</b> The file is verified. <b>false:</b> The file is not verified.</p> <p><b>Default value:</b> <b>false</b></p>
versionId	String	No	<p><b>Explanation:</b> Object version ID, for example, <b>G001117FCE89978B0000401205D5DC9</b>.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None. If this parameter is left blank, the latest version of the object is obtained.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to automatically decode the response headers.</p> <p><b>Default value:</b> None</p>
ifModifiedSince	Date	No	<p><b>Explanation:</b> Returns the object if it has been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
ifUnmodifiedSince	Date	No	<b>Explanation:</b> Returns the object if it has not been modified since the specified time; otherwise, an error is returned. <b>Default value:</b> None
ifMatchTag	String	No	<b>Explanation:</b> Returns the object content if the object's ETag is the same as the value of this parameter. Otherwise, an error is reported. <b>Default value:</b> None
ifNoneMatchTag	String	No	<b>Explanation:</b> Returns the object content if the object's ETag is different from the value of this parameter. Otherwise, an error is reported. <b>Default value:</b> None
progressListener	<b>Progress Listener</b>	No	<b>Explanation:</b> Data transmission listener for obtaining the download progress. For details, see <a href="#">Table 9-76</a> .

Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 9-76** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 9-77</a>.</p> <p><b>Default value:</b> None</p>

**Table 9-77** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<b>Explanation:</b> Progress data. For details, see <a href="#">Table 9-78</a> . <b>Default value:</b> None

**Table 9-78** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 9-79** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 9-80** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<p><b>Explanation:</b> Cache-Control header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If this header is not set, the default storage class of the bucket is used as the storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 9-79</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

Table 9-81 DownloadFileResult

Parameter	Type	Description
objectMetadata	<b>ObjectMetadata</b>	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 9-80</a>.</p>

## Code Examples

This example downloads object **objectname** from bucket **examplebucket** to **localfile** using the resumable download.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.DownloadFileRequest;
import com.obs.services.model.DownloadFileResult;
public class DownloadFile001 {
    public static void main(String[] args) {
```



```
// Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    DownloadFileRequest request = new DownloadFileRequest("examplebucket", "objectname");
    // Set the local path the object will be downloaded to.
    request.setDownloadFile("localfile");
    // Set the maximum number of parts that can be concurrently downloaded.
    request.setTaskNum(5);
    // Set the part size to 10 MB.
    request.setPartSize(10 * 1024 * 1024);
    // Enable the resumable upload.
    request.setEnableCheckpoint(true);
    // Perform a resumable download.
    DownloadFileResult result = obsClient.downloadFile(request);
    System.out.println("downloadFile successfully");
    System.out.println("Etag:" + result.getObjectMetadata().getEtag());
} catch (ObsException e) {
    System.out.println("downloadFile failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("downloadFile failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Downloading Objects](#)
- [\(GitHub\) Sample Code for Downloading an Object](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

# 10 Object Management (SDK for Java)

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## 10.1 Configuring Object Metadata (SDK for Java)

### Function

Object metadata is a set of name-value pairs that describe the object and is used for object management.

Currently, only the system-defined metadata is supported.

There are two kinds of metadata: system-controlled metadata and user-controlled metadata. The kind of metadata like **Last-Modified** is controlled by the system and cannot be modified. However, the kind of metadata configured for objects such as **ContentLanguage** can be modified by calling APIs.

This API sends a HEAD request to configure the metadata of an object in a specified bucket.

### Restrictions

- To configure object metadata, you must be the bucket owner or have the required permission (**obs:object:ModifyObjectMetaData** in IAM or **ModifyObjectMetaData** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.
- Currently, metadata names only support ASCII characters. Non-ASCII characters must be Base64-encoded.
- If versioning is enabled for a bucket, you can set metadata for objects of the latest version, but cannot set metadata for noncurrent objects.
- You cannot set metadata for Archive objects.
- If a folder or directory is an actual object in an object bucket, their metadata can be modified. If a directory is a simulated directory, for example, **test/** in the **test/test1.txt** object, the metadata of this simulated directory cannot be modified.

## Method

obsClient.setObjectMetadata([SetObjectMetadataRequest request](#))

## Request Parameters

**Table 10-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetObjectMetadataRequest</a>	Yes	<b>Explanation:</b> Request parameters for obtaining object metadata. For details, see <a href="#">Table 10-2</a> .

**Table 10-2** SetObjectMetadataRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of the object.</p> <p><b>Value range:</b> See <a href="#">Table 10-3</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
removeUnset	boolean	No	<b>Explanation:</b> Whether to delete the previously set metadata. <b>Value range:</b> <b>true:</b> If this action is successful, the previously configured metadata (excluding the standard metadata), will be deleted. <b>false:</b> The previously configured metadata will not be deleted even if this action is successful. <b>Default value:</b> <b>false</b>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, String>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key and value indicate the name and value of the user-defined metadata respectively. After the metadata is defined, when you later download the object or query its metadata, the user-defined metadata is returned in the response.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The user-defined metadata cannot exceed 8 KB in total. To measure the size, calculate the sum of bytes of all UTF-8 encoded keys and values.</li> <li>• The user-defined metadata keys are case insensitive, because OBS converts the uppercase keys to lowercase for storage. However, the metadata values are case sensitive.</li> <li>• Both user-defined metadata keys and their values must conform to US-ASCII standards. If non-ASCII or unrecognizable characters are necessary, they must be encoded or decoded in URL or Base64 on the client, because the server side does not perform any decoding.</li> </ul> <p><b>Default value:</b> None</p>
userHeaders	HashMap<String, String>	No	<p><b>Explanation:</b> User header list. In <b>HashMap</b>, the <b>String</b> key and value indicate the name and value of the user header field respectively. The SDK does not process the <b>userHeaders</b> and instead transparently transmits it to the server for later use.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>
replaceMetadata	<b>ObjectReplaceMetadata</b>	No	<p><b>Explanation:</b> It specifies the metadata returned when the object is downloaded. For details, see <a href="#">Table 10-4</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b></p> <p>If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket:  <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>:  <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p>OBS obtains the specified value from the header and stores it in the object metadata <b>WebsiteRedirectLocation</b>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>• OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>

**Table 10-3** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 10-4** ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b>                      MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b>                      See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b>                      None</p>
contentLanguage	String	No	<p><b>Explanation:</b>                      Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b>                      None</p>
expires	String	No	<p><b>Explanation:</b>  <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded.</p> <p><b>Default value:</b>                      None</p>
cacheControl	String	No	<p><b>Explanation:</b>  <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 10-5** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> None</p>
contentEncoding	String	No	<p><b>Explanation:</b> It specifies the content encoding format when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentTypeLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity.</p> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864.</p> <p>Example: <code>n58IG6hfM7vqI4K0vnWpog==</code></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Object storage class. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 10-3</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata.</p> <p><b>Default value:</b> None</p>
statusCode	int	This parameter is automatically set in the response.	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	This parameter is automatically set in the response.	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

### Code Example: Configuring Metadata for the Object

This example configures metadata for object **objectname** by specifying the user-defined metadata and using **userHeaders** that are transparently transmitted.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.SetObjectMetadataRequest;
import java.util.HashMap;
public class SetObjectMetadata001 {
```

```
public static void main(String[] args) {
    // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
    // hard coding may result in leakage.
    // Obtain an AK/SK pair on the management console.
    String ak = System.getenv("ACCESS_KEY_ID");
    String sk = System.getenv("SECRET_ACCESS_KEY_ID");
    // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
    // advised not to use hard coding, which may result in information leakage.
    // Obtain an AK/SK pair and a security token using environment variables or import them in other
    // ways.
    // String securityToken = System.getenv("SECURITY_TOKEN");
    // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
    // with the one in your actual situation.
    String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
    // Obtain an endpoint using environment variables or import it in other ways.
    //String endPoint = System.getenv("ENDPOINT");

    // Create an ObsClient instance.
    // Use the permanent AK/SK pair to initialize the client.
    ObsClient obsClient = new ObsClient(ak, sk, endPoint);
    // Use the temporary AK/SK pair and security token to initialize the client.
    // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

    try {
        // Configure metadata for the object.
        SetObjectMetadataRequest request = new SetObjectMetadataRequest("examplebucket",
"objectname");
        // Standard HTTP headers of an object
        request.setContentType("ContentType");
        request.setExpires("Expires");
        // During the user-defined metadata setting, the SDK automatically adds x-obs-meta-.
        request.addUserMetadata("property1", "property-value1");
        HashMap<String, String> userHeaders = new HashMap<>();
        // userHeaders set by the SDK are transparently transmitted. They are not processed so they can be
        // used more flexibly later. If a userHeader needs to be displayed as user-defined metadata on the server, add
        // x-obs-meta- before the userHeader for the server to identify.
        userHeaders.put("property2", "property-value2");
        userHeaders.put("x-obs-meta-property3", "property-value3");
        request.setUserHeaders(userHeaders);
        ObjectMetadata metadata = obsClient.setObjectMetadata(request);
        System.out.println("setObjectMetadata successfully");
        System.out.println("UserMetadata:" + metadata.getUserMetadata("property1"));
    } catch (ObsException e) {
        System.out.println("setObjectMetadata failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("setObjectMetadata failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

After you run the sample code above and configure the user-defined metadata **property1** and user headers **property2** and **x-obs-meta-property3**, the HTTP header in the packet capture is as follows:



```
PUT /<bucket>?metadata HTTP/1.1
x-obs-meta-property1: property-value1
x-obs-metadata-directive: REPLACE_NEW
property2: property-value2
x-obs-meta-property3: property-value3
```

## Code Example: Deleting Metadata for the Object

If you want to delete some metadata by calling the API for setting object metadata, configure the metadata to be retained and set **SetObjectMetadataRequest.setRemoveUnset** to **true**. Then, once the API is called, the data whose metadata is not configured will be deleted. Therefore, exercise caution when using **SetObjectMetadataRequest.setRemoveUnset(true)**.

This example deletes the user-defined metadata of object **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.SetObjectMetadataRequest;
import java.util.HashMap;
public class SetObjectMetadata002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            SetObjectMetadataRequest request = new SetObjectMetadataRequest();
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            request.setRemoveUnset(true);
            HashMap<String, String> userHeaders = new HashMap<>();
            // After request.setRemoveUnset is set to true, the server saves metadata property1 and deletes
the user-defined metadata saved before.
            userHeaders.put("x-obs-meta-property1", "property-value1");
            request.setUserHeaders(userHeaders);
            obsClient.setObjectMetadata(request);
            System.out.println("setObjectMetadata successfully");
        } catch (ObsException e) {
            System.out.println("setObjectMetadata failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
```

```
System.out.println("Error Message:" + e.getMessage());  
// Request failed. Print the request ID.  
System.out.println("Request ID:" + e.getErrorRequestId());  
System.out.println("Host ID:" + e.getErrorHostId());  
e.printStackTrace();  
} catch (Exception e) {  
    System.out.println("setObjectMetadata failed");  
    // Print other error information.  
    e.printStackTrace();  
}  
}
```

## Helpful Links

- [Configuring Object Metadata](#)
- [\(GitHub\) Sample Code for Configuring Object Metadata](#)
- [OBS Error Codes](#)

## 10.2 Obtaining Object Metadata (SDK for Java)

### Function

Object metadata is a set of name-value pairs that describe the object and is used for object management.

Users with the READ permission on objects can send HEAD requests to retrieve metadata from objects. The metadata of the objects is included in the response.

This operation supports server-side encryption.

### Restrictions

- To obtain object metadata, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- You can also call **metadata.getOriginalHeaders** to obtain information about all original response headers.

### Method

obsClient.getObjectMetadata([GetObjectMetadataRequest request](#))

## Request Parameters

**Table 10-6** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectMetadataRequest</a>	Yes	<b>Explanation:</b> Request parameters for obtaining object metadata. For details, see <a href="#">Table 10-7</a> .

**Table 10-7** GetObjectMetadataRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
userHeaders	HashMap <String, String>	No	<p><b>Explanation:</b> User header list. In <b>HashMap</b>, the <b>String</b> key and value indicate the name and value of the user header field respectively. The SDK does not process the <b>userHeaders</b> and instead transparently transmits it to the server for later use.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>
sseHeader	<b>SseHeader</b>	No	<p><b>Explanation:</b> Server-side decryption headers. For details, see <a href="#">Table 10-8</a>.</p>

**Table 10-8** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<b>ServerAlgorithm</b>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 10-9</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 10-10</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 10-9** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 10-10** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

## Responses

**Table 10-11** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b>                      Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b>                      None</p>
cacheControl	String	No	<p><b>Explanation:</b>  <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b>                      None</p>
contentType	String	No	<p><b>Explanation:</b>                      Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b>                      None</p>
expires	String	No	<p><b>Explanation:</b>                      The time a cached web page object expires.</p> <p><b>Restrictions:</b>                      The time must be in the GMT format.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b>                      Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b>                      Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864.                      Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b>                      None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b>                      Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b>                      See <a href="#">Table 10-12</a>.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 10-12** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Code Examples

This example returns the metadata of object **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
public class GetObjectMetadata001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
```

```
hard coding may result in leakage.
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
// Obtain the object metadata.
ObjectMetadata metadata = obsClient.getObjectMetadata("examplebucket", "objectname");
System.out.println("getObjectMetadata successfully");
System.out.println("ContentType:" + metadata.getContentType());
System.out.println("ContentLength:" + metadata.getContentLength());
// Obtain the user-defined metadata.
System.out.println("UserMetadata:" + metadata.getUserMetadata("property"));
// Obtain all original response headers.
System.out.println("OriginalHeaders:" + metadata.getOriginalHeaders());
} catch (ObsException e) {
System.out.println("getObjectMetadata failed");
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
System.out.println("getObjectMetadata failed");
// Print other error information.
e.printStackTrace();
}
}
```

## Helpful Links

- [Querying Object Metadata](#)
- [\(GitHub\) Sample Code for Obtaining Object Metadata](#)
- [OBS Error Codes](#)

## 10.3 Configuring an Object ACL (SDK for Java)

### Function

OBS allows the control of access permissions for objects. By default, only object creators have the read and write permissions on the object. You can set other

access control policies for objects. For example, if an object is configured with the public access policy, all users are allowed to read the object. If an object is encrypted with SSE-KMS, the ACL configured for it is not in effect in the cross-tenant case.

You can set an ACL when uploading an object or call an ACL API to modify or obtain the ACL of an existing object.

Object ACLs, similar to bucket ACLs, support [predefined ACLs](#) and direct configurations.

An object [ACL](#) can be configured in any of the following ways:

1. [Setting a Pre-defined ACL When Uploading the Object](#)
2. [Calling `ObsClient.setObjectAcl` to Set a Pre-defined ACL](#)
3. [Calling `ObsClient.setObjectAcl` to Set an ACL Directly](#)

## Restrictions

- To configure an object ACL, you must be the bucket owner or have the required permission (`obs:object:PutObjectAcl` in IAM or `PutObjectAcl` in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- An object can have a maximum of 100 policies in its ACL.

## Method

`obsClient.setObjectAcl(SetObjectAclRequest request)`

## Request Parameters

**Table 10-13** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetObjectAclRequest</a>	Yes	<b>Explanation:</b> Request parameters for setting an object ACL. For details, see <a href="#">Table 10-14</a> .

**Table 10-14** SetObjectAclRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	Yes	<p><b>Explanation:</b> An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 10-15</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 10-16</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>



**Table 10-15** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 10-16** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	<b>Owner</b>	Yes	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 10-17</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 10-18</a> .

**Table 10-17** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 10-18** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 10-19</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 10-22</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 10-19** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 10-20</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 10-21</a> . <b>Default value:</b> None

**Table 10-20** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 10-21** GroupGrantee

Constant	Description
ALL_USERS	All users.

Constant	Description
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 10-22** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>

Constant	Default Value	Description
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

## Responses

**Table 10-23** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

### Code Example: Setting a Pre-defined ACL When Uploading the Object

This example uploads **localfile** to bucket **examplebucket** as object **objectname**, and specifies a pre-defined ACL during the upload.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.AccessControlList;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class PutObject012 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Specify a pre-defined ACL during object upload.
            PutObjectRequest request = new PutObjectRequest();
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            request.setFile(new File("localfile"));
            // Set the object ACL to private.
            request.setAcl(AccessControlList.REST_CANNED_PRIVATE);
            obsClient.putObject(request);
            System.out.println("putObject successfully");
        } catch (ObsException e) {
            System.out.println("putObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("putObject failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Code Example: Setting a Pre-defined ACL for the Object

This example sets private access to object **objectname** by specifying a pre-defined ACL.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
public class SetObjectAcl001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
```

```
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set a pre-defined ACL for the object.
    // Set the object ACL to private.
    obsClient.setObjectAcl("examplebucket", "objectname", AccessControlList.REST_CANNED_PRIVATE);
    System.out.println("setObjectAcl successfully");
} catch (ObsException e) {
    System.out.println("setObjectAcl failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setObjectAcl failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Setting an ACL for the Object Directly

This example configures an ACL for object **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.CanonicalGrantee;
import com.obs.services.model.GroupGrantee;
import com.obs.services.model.Owner;
import com.obs.services.model.Permission;
public class SetObjectAcl002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
```



with the one in your actual situation.

```
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    AccessControlList acl = new AccessControlList();
    Owner owner = new Owner();
    owner.setId("ownerid");
    // (Mandatory) Owner ID
    acl.setOwner(owner);
    //Retain the owner's full control permissions. (Note that if this permission is not set, the owner
does not have the access permission.)
    acl.grantPermission(new CanonicalGrantee("ownerid"), Permission.PERMISSION_FULL_CONTROL);
    // Grant the full control permission to a specified user.
    acl.grantPermission(new CanonicalGrantee("userid"), Permission.PERMISSION_FULL_CONTROL);
    // Grant the read permission to all users.
    acl.grantPermission(GroupGrantee.ALL_USERS, Permission.PERMISSION_READ);
    obsClient.setObjectAcl("examplebucket", "objectname", acl);
    System.out.println("setObjectAcl successfully");
    System.out.println(acl);
} catch (ObsException e) {
    System.out.println("setObjectAcl failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setObjectAcl failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Setting an Object ACL](#)
- [\(GitHub\) Sample Code for Setting an Object ACL](#)
- [OBS Error Codes](#)

## 10.4 Obtaining an Object ACL (SDK for Java)

### Function

This API returns the ACL of an object in a specified bucket. You can use this operation to obtain the ACL of an object in a specified bucket.

## Restrictions

- To obtain an object ACL, you must be the bucket owner or have the required permission (**obs:object:GetObjectAcl** in IAM or **GetObjectAcl** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).

## Method

obsClient.getObjectAcl([GetObjectAclRequest request](#))

## Request Parameters

**Table 10-24** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	GetObjectAclRequest	Yes	<b>Explanation:</b> Request parameters for obtaining an object ACL. For details, see <a href="#">Table 10-25</a> .

**Table 10-25** GetObjectAclRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>
versionId	String	No	<p><b>Explanation:</b>                      Object version ID.</p> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None</p>

## Responses

**Table 10-26** AccessControlList

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
owner	<a href="#">Owner</a>	<p><b>Explanation:</b> Object owner. For details, see <a href="#">Table 10-31</a>.</p>
grants	Set< <a href="#">Grant AndPermission</a> >	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 10-27</a>.</p>
delivered	boolean	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 10-27** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 10-28</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 10-32</a> . <b>Default value:</b> None
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>

**Table 10-28** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 10-29</a> .

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 10-30</a>.</p> <p><b>Default value:</b> None</p>

**Table 10-29** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 10-30** GroupGrantee

Constant	Description
ALL_USERS	All users.

Constant	Description
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 10-31** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 10-32** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>



Constant	Default Value	Description
PERMISSION_WRITE	WRITE	Write permission. A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket. This permission is not available for objects.
PERMISSION_READ_ACP	READ_ACP	Permission to read an ACL. A grantee with this permission can obtain the ACL of a bucket or object. A bucket or object owner has this permission for their bucket or object by default.
PERMISSION_WRITE_ACP	WRITE_ACP	Permission to modify an ACL. A grantee with this permission can update the ACL of a bucket or object. A bucket or object owner has this permission for their bucket or object by default. This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.
PERMISSION_FULL_CONTROL	FULL_CONTROL	Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL. A grantee with this permission for a bucket has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the bucket. A grantee with this permission for an object has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the object.

## Code Examples

This example returns the ACL information of object **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.AccessControlList;
public class GetObjectAcl001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Obtain the object ACL.
            AccessControlList acl = obsClient.getObjectAcl("examplebucket", "objectname");
            System.out.println("getObjectAcl successfully");
            System.out.println(acl);
        } catch (ObsException e) {
            System.out.println("getObjectAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("getObjectAcl failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Obtaining Object ACL Configuration](#)
- [\(GitHub\) Sample Code for Obtaining an Object ACL](#)
- [OBS Error Codes](#)

## 10.5 Listing Objects (SDK for Java)

### Function

This API lists some or all of the objects in a bucket. You can use parameters such as the prefix, number of returned objects, and start position to list objects that meet specified criteria. Returned objects are listed in alphabetical order by object name.

## Restrictions

- To list objects in a bucket, you must be the bucket owner or have the required permission (**obs:bucket:ListBucket** in IAM or **ListBucket** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- A maximum of 1,000 object versions can be returned in a single request. If a bucket contains more than 1,000 object versions, you can use [pagination](#) to list all versions. If **ListVersionsResult.isTruncated** is **true**, only part of object versions are returned. In this case, you can use **ListVersionsResult.getNextKeyMarker** and **ListVersionsResult.getNextVersionIdMarker** to obtain the start position for the next listing.

## Method

obsClient.listObjects([ListObjectsRequest request](#))

## Request Parameters

Table 10-33 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">ListObjectsRequest</a>	Yes	<b>Explanation:</b> Request parameters for listing the objects in a bucket. For details, see <a href="#">Table 10-34</a> .

**Table 10-34** ListObjectsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	No	<p><b>Explanation:</b> Name prefix that the objects to be listed must contain.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> will be returned. If this parameter is null and there are no other filter criteria, all objects in the bucket will be returned.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
marker	String	No	<p><b>Explanation:</b> Name of the object to start with when listing objects in a bucket. All objects following this object are listed in alphabetical order by object name.</p> <p>Assume that you have the following objects: <b>test/a</b>, <b>test/b</b>, <b>test/c</b>, and <b>test/d</b>. If you specify <b>test/b</b> as the marker, <b>test/c</b> and <b>test/d</b> are returned.</p> <p><b>Restrictions:</b> This parameter is only available for listing objects with a single version.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
maxKeys	int	No	<b>Explanation:</b> The maximum number of objects returned in the response in alphabetical order. <b>Value range:</b> The value ranges from 1 to 1000. If the specified value is beyond this range, only 1,000 objects are returned. <b>Default value:</b> 1000

Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	<p><b>Explanation:</b></p> <p>Object names are grouped by this parameter, which is often used with <b>Prefix</b>. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one <b>CommonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>CommonPrefixes</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, files <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, files <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>CommonPrefixes</b> with <b>bbcde</b> as the prefix.</p> <p>For a PFS, if this parameter is not specified, all the contents in the current directory are recursively listed by default, and subdirectories are also listed. In big data scenarios, PFSs usually have multiple directory levels and each directory level has a large number of files. In such case, you are advised to configure <b>[delimiter=/]</b> to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing.</p> <p><b>Value range:</b></p> <p>The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encodingType	String	No	<p><b>Explanation:</b>            Encoding type for some elements in the response. If <b>delimiter</b>, <b>marker</b>, <b>prefix</b>, <b>nextMarker</b>, and <b>objectKey</b> contain control characters that are not supported by the XML 1.0 standard, you can set <b>encodingType</b> to encode <b>delimiter</b>, <b>marker</b>, <b>prefix</b> (including the <b>prefix</b> in <b>commonPrefixes</b>), <b>nextMarker</b>, and <b>objectKey</b> in the response.</p> <p><b>Value range:</b>            url</p> <p><b>Default value:</b>            None. If you leave this parameter blank, encoding is not applied.</p>



## Responses

**Table 10-35** ObjectListing

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Description
prefix	String	<p><b>Explanation:</b> Object name prefix.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> will be returned. If this parameter is null and there are no other filter criteria, all objects in the bucket will be returned.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
objectSummaries	List<ObsObject>	<p><b>Explanation:</b> List of objects in the bucket. For details, see <a href="#">Table 10-36</a>.</p>
commonPrefixes	List<String>	<p><b>Explanation:</b> List of object name prefixes grouped according to the <b>delimiter</b> parameter (if specified)</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
truncated	boolean	<p><b>Explanation:</b> Whether all objects are returned in the response. A maximum of 1,000 objects can be listed at a time. If the number of objects is greater than 1,000, the objects beyond 1,000 cannot be returned.</p> <p><b>Value range:</b> <b>true:</b> Not all objects are returned. <b>false:</b> All objects are returned.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
marker	String	<p><b>Explanation:</b> Where in the bucket the listing starts from. All objects following the object specified by this parameter are listed in alphabetical order by object name. Assume you have the following objects: <b>test/a</b>, <b>test/b</b>, <b>test/c</b>, and <b>test/d</b>. If you specify <b>test/b</b> as the marker, <b>test/c</b> and <b>test/d</b> are returned.</p> <p><b>Restrictions:</b> This parameter is only available for listing objects with a single version.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
maxKeys	int	<p><b>Explanation:</b> The maximum number of objects returned in the response in alphabetical order.</p> <p><b>Value range:</b> The value ranges from 1 to 1000. If the specified value is beyond this range, only 1,000 objects are returned.</p> <p><b>Default value:</b> 1000</p>

Parameter	Type	Description
delimiter	String	<p><b>Explanation:</b></p> <p>Object names are grouped by this parameter, which is often used with <b>Prefix</b>. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one <b>CommonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>CommonPrefixes</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, files <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, files <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>CommonPrefixes</b> with <b>bbcde</b> as the prefix.</p> <p>For a PFS, if this parameter is not specified, all the contents in the current directory are recursively listed by default, and subdirectories are also listed. In big data scenarios, PFSs usually have multiple directory levels and each directory level has a large number of files. In such case, you are advised to configure <b>[delimiter=/]</b> to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing.</p> <p><b>Value range:</b></p> <p>The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Type	Description
nextMarker	String	<p><b>Explanation:</b> Where in the bucket the next listing begins. If not all objects are returned, the response contains this parameter to mark the last object returned for the current request. You can use the value of this parameter as the value of <b>Marker</b> in the subsequent request to list the remaining objects.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
location	String	<p><b>Explanation:</b> Region where a bucket is located.</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

**Table 10-36** ObsObject

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
objectContent	InputStream	<b>Explanation:</b> The data stream of the object. <b>Default value:</b> None
owner	<b>Owner</b>	<b>Explanation:</b> Object owner. This parameter contains the domain ID and name of the object owner. For details, see <a href="#">Table 10-37</a> . <b>Default value:</b> None
metadata	<b>ObjectMetadata</b>	<b>Explanation:</b> Object metadata. <b>Value range:</b> Object metadata. For details, see <a href="#">Table 10-39</a> . <b>Default value:</b> None

**Table 10-37** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Explanation:</b> Account name of the owner. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 10-38** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 10-39** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <a href="#">multipart uploads</a> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentEncoding	String	No	<p><b>Explanation:</b>  <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b>  None</p>
contentDisposition	String	No	<p><b>Explanation:</b>  Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b>  None</p>
cacheControl	String	No	<p><b>Explanation:</b>  <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b>  None</p>
contentLanguage	String	No	<p><b>Explanation:</b>  Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b>  None</p>
expires	String	No	<p><b>Explanation:</b>  The time a cached web page object expires.</p> <p><b>Restrictions:</b>  The time must be in the GMT format.</p> <p><b>Default value:</b>  None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the object data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the object must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 10-38</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

### Code Example: Listing Objects in a Bucket

This example lists objects in bucket **examplebucket**. A maximum of 1,000 objects can be returned.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
```

```
// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Listing objects.
    ObjectListing result = obsClient.listObjects("examplebucket");
    for (ObsObject obsObject : result.getObjects()) {
        System.out.println("listObjects successfully");
        System.out.println("ObjectKey:" + obsObject.getObjectKey());
        System.out.println("Owner:" + obsObject.getOwner());
    }
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Specifying the Object Count for Listing

This example lists a specified number of objects in bucket **examplebucket**. A maximum of 100 objects can be listed.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
```

```
// List a specified number of objects.
ListObjectsRequest request = new ListObjectsRequest("examplebucket");
// Set the number of objects to be listed to 100.
request.setMaxKeys(100);
ObjectListing result = obsClient.listObjects(request);
for (ObsObject obsObject : result.getObjects()) {
    System.out.println("listObjects successfully");
    System.out.println("ObjectKey:" + obsObject.getObjectKey());
    System.out.println("Owner:" + obsObject.getOwner());
}
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Specifying the Prefix for Listing

This example specifies a prefix to list objects in bucket **examplebucket**. A maximum of 100 objects can be listed.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List objects by specifying a prefix.
            ListObjectsRequest request = new ListObjectsRequest("examplebucket");
            // List 100 objects with the specified prefix.
            request.setMaxKeys(100);
```

```
request.setPrefix("prefix");
ObjectListing result = obsClient.listObjects(request);
for (ObsObject obsObject : result.getObjects()) {
    System.out.println("listObjects successfully");
    System.out.println("ObjectKey:" + obsObject.getObjectKey());
    System.out.println("Owner:" + obsObject.getOwner());
}
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Specifying the Start Position for Listing

This example specifies a start position to list objects in bucket **examplebucket**. A maximum of 100 objects can be listed.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects004 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List objects by specifying the start position.
            ListObjectsRequest request = new ListObjectsRequest("examplebucket");
            // Specify that 100 objects whose names follow test in lexicographical order will be listed.
            request.setMaxKeys(100);
            request.setMarker("test");
            ObjectListing result = obsClient.listObjects(request);
            for (ObsObject obsObject : result.getObjects()) {
```

```
        System.out.println("listObjects successfully");
        System.out.println("ObjectKey:" + obsObject.getObjectKey());
        System.out.println("Owner:" + obsObject.getOwner());
    }
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Using Pagination to List All Objects

This example lists all objects in bucket **examplebucket** using pagination. A maximum of 100 objects can be listed on each page.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects005 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List all objects using pagination.
            ListObjectsRequest request = new ListObjectsRequest("examplebucket");
            // Set the number of objects displayed per page to 100.
            request.setMaxKeys(100);
            ObjectListing result;
            do {
                result = obsClient.listObjects(request);
                for (ObsObject obsObject : result.getObjects()) {
                    System.out.println("listObjects successfully");
                    System.out.println("ObjectKey:" + obsObject.getObjectKey());
                }
            } while (result.isTruncated());
        } catch (ObsException e) {
            System.out.println("listObjects failed");
            e.printStackTrace();
        }
    }
}
```



```
        System.out.println("Owner:" + obsObject.getOwner());
    }
    request.setMarker(result.getNextMarker());
} while (result.isTruncated());
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing Objects in a Folder

There is no concept of folders in OBS. All elements stored in OBS buckets are objects. Folders are actually objects whose sizes are 0 and whose names end with a slash (/). You can set a folder name as a prefix to list objects in this folder. This example lists objects in a folder.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects006 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            //List all objects in a folder.
            ListObjectsRequest request = new ListObjectsRequest("examplebucket");
            // Set folder name dir/ as the prefix.
            request.setPrefix("dir/");
            request.setMaxKeys(100);
            ObjectListing result;
            do {
```

```
        result = obsClient.listObjects(request);
        for (ObsObject obsObject : result.getObjects()) {
            System.out.println("listObjects successfully");
            System.out.println("ObjectKey:" + obsObject.getObjectKey());
            System.out.println("Owner:" + obsObject.getOwner());
        }
        request.setMarker(result.getNextMarker());
    } while (result.isTruncated());
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing All Objects in a Bucket by Folder Name

This example lists all objects in bucket `examplebucket`.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
public class ListObjects007 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List all objects in the root directory.
            ListObjectsRequest request = new ListObjectsRequest("examplebucket");
            request.setMaxKeys(1000);
            // Set folder isolators to slashes (/).
            request.setDelimiter("/");
            ObjectListing result = obsClient.listObjects(request);
            System.out.println("Objects in the root directory:");
        }
```

```
    for (ObsObject obsObject : result.getObjects()) {
        System.out.println("listObjects successfully");
        System.out.println("ObjectKey:" + obsObject.getObjectKey());
        System.out.println("Owner:" + obsObject.getOwner());
    }
    listObjectsByPrefix(obsClient, request, result);
} catch (ObsException e) {
    System.out.println("listObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Recursively Listing Objects in a Sub-folder

This example recursively lists objects in a sub-folder.

```
// Recursively list objects in a sub-folder.
static void listObjectsByPrefix(ObsClient obsClient, ListObjectsRequest request, ObjectListing result)
    throws ObsException {
    for (String prefix : result.getCommonPrefixes()) {
        System.out.println("Objects in folder [" + prefix + "]:");
        request.setPrefix(prefix);
        result = obsClient.listObjects(request);
        for (ObsObject obsObject : result.getObjects()) {
            System.out.println("ObjectKey:" + obsObject.getObjectKey());
            System.out.println("Owner:" + obsObject.getOwner());
        }
        listObjectsByPrefix(obsClient, request, result);
    }
}
}
```

### NOTE

- The sample code does not apply to scenarios where the number of objects in a folder exceeds 1,000.
- Since all folder names end with a slash (/) and the objects and sub-folders to list are under the folder, **delimiter** is always a slash (/).
- In the returned result of each recursion, **ObjectListing.getObjects** includes the objects under the folder, and **ObjectListing.getCommonPrefixes** includes the sub-folders under the folder.

## 10.6 Deleting an Object (SDK for Java)

### Function

This API deletes objects from a specific bucket.

## Restrictions

- To delete an object, you must be the bucket owner or have the required permission (**obs:object:DeleteObject** in IAM or **DeleteObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- If versioning is not enabled for a bucket, deleted objects cannot be recovered.

## Method

obsClient.deleteObject([DeleteObjectRequest request](#))

## Request Parameters

**Table 10-40** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">DeleteObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for deleting an object. For details, see <a href="#">Table 10-41</a> .

**Table 10-41** DeleteObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 10-42** DeleteObjectResult

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None
versionId	String	<b>Explanation:</b> Object version ID. <b>Value range:</b> The value must contain 32 characters. <b>Default value:</b> None
deleteMarker	boolean	<b>Explanation:</b> Whether the deleted object is a delete marker. <b>Value range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The deleted object is a delete marker.</li><li>• <b>false:</b> The deleted object is not a delete marker.</li></ul> <b>Default value:</b> false

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example deletes object **objectname** from bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Delete the object.
            obsClient.deleteObject("examplebucket", "objectname");
            System.out.println("deleteObject successfully");
        } catch (ObsException e) {
            System.out.println("deleteObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
        }
    }
}
```



```
// Request failed. Print the request ID.  
System.out.println("Request ID:" + e.getErrorRequestId());  
System.out.println("Host ID:" + e.getErrorHostId());  
e.printStackTrace();  
} catch (Exception e) {  
    System.out.println("deleteObject failed");  
    // Print other error information.  
    e.printStackTrace();  
}  
}
```

## Helpful Links

- [Deleting an Object](#)
- [\(GitHub\) Sample Code for Object Deletion](#)
- [OBS Error Codes](#)

## 10.7 Batch Deleting Objects (SDK for Java)

### Function

This API deletes objects in batches from a specific bucket. Deleted objects cannot be recovered.

In a batch delete operation, OBS concurrently deletes the specified objects and returns the deletion result of each object.

### Restrictions

- To delete objects in a batch, you must be the bucket owner or have the required permission (**obs:object:DeleteObject** in IAM or **DeleteObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- If versioning is not enabled for a bucket, deleted objects cannot be recovered.
- 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, if an internal error occurs during cyclic deletion of multiple objects, an object may be deleted in the index data but still exist in the metadata.

### Method

obsClient.deleteObjects([DeleteObjectsRequest deleteRequest](#))

## Request Parameters

**Table 10-43** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
deleteRequest	DeleteObjectsRequest	Yes	<b>Explanation:</b> Request parameters for deleting objects in batches. For details, see <a href="#">Table 10-44</a> .

**Table 10-44** DeleteObjectsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
keyAndVersions	List<Key AndVersion>	Yes	<p><b>Explanation:</b> List of objects to be deleted. For details, see <a href="#">Table 10-45</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
quiet	boolean	No	<p><b>Explanation:</b>                      Response mode to the request for deleting objects in a batch.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>false:</b> The detailed mode. Results of both successful and failed deletions are returned.</li> <li>• <b>true:</b> The quiet mode. Only results of failed deletions are returned.</li> </ul> <p><b>Default value:</b>  <b>false</b></p>
encodingType	String	No	<p><b>Explanation:</b>                      Encoding type for <b>objectKey</b> in the response. If <b>objectKey</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>objectKey</b>.</p> <p><b>Value range:</b>  <b>url</b></p> <p><b>Default value:</b>                      None. If you leave this parameter blank, encoding is not applied.</p>

**Table 10-45** KeyAndVersion

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>
versionId	String	No	<p><b>Explanation:</b>                      Object version ID.</p> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None. If this parameter is left blank, the latest version of the object is deleted.</p>

## Responses

**Table 10-46** DeleteObjectsResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
deletedObjectResults	List< <a href="#">DeleteObjectResult</a> >	<p><b>Explanation:</b> Response results of the request for deleting objects in a batch. For details, see <a href="#">Table 10-47</a>.</p>
errorResults	List< <a href="#">ErrorResult</a> >	<p><b>Explanation:</b> List of objects that fail to be deleted. For details, see <a href="#">Table 10-48</a>.</p>

**Table 10-47** DeleteObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
deleteMarker	boolean	<p><b>Explanation:</b> Whether the deleted object is a delete marker.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> The deleted object is a delete marker.</li> <li>• <b>false:</b> The deleted object is not a delete marker.</li> </ul> <p><b>Default value:</b> <b>false</b></p>

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

**Table 10-48** ErrorResult

Parameter	Type	Description
versionId	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
errorCode	String	<p><b>Explanation:</b> Error code for the failed deletion. For details, see <a href="#">OBS Error Codes</a>.</p>



Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
message	String	<p><b>Explanation:</b> Error message for the failed deletion. For details, see <a href="#">OBS Error Codes</a>.</p>

## Code Examples

This example batch deletes all objects in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.DeleteObjectsRequest;
import com.obs.services.model.DeleteObjectsResult;
import com.obs.services.model.ListVersionsRequest;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
import java.awt.*;
public class DeleteObjects001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
```

```
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Batch delete the objects.
    ListVersionsRequest request = new ListVersionsRequest("examplebucket");
    // Delete 100 objects at a time.
    request.setMaxKeys(100);
    ListVersionsResult result;
    do {
        result = obsClient.listVersions(request);
        DeleteObjectsRequest deleteRequest = new DeleteObjectsRequest("examplebucket");
        //deleteRequest.setQuiet(true); // This demo uses the verbose mode by default. To use the quiet
mode, add this line of code.
        for (VersionOrDeleteMarker v : result.getVersions()) {
            // Obtain objects' names and version IDs.
            deleteRequest.addKeyAndVersion(v.getKey(), v.getVersionId());
        }
        if(deleteRequest.getKeyAndVersions().length > 0){
            DeleteObjectsResult deleteResult = obsClient.deleteObjects(deleteRequest);
            // Obtain successfully deleted objects.
            System.out.println("DeletedObjectResults:" + deleteResult.getDeletedObjectResults());
            // Obtain objects failed to be deleted.
            System.out.println("ErrorResults:" + deleteResult.getErrorResults());
        }else{
            System.out.println("No object to delete");
        }
        request.setKeyMarker(result.getNextKeyMarker());
        // If versioning is not enabled, do not configure VersionIdMarker.
        request.setVersionIdMarker(result.getNextVersionIdMarker());
    } while (result.isTruncated());
    System.out.println("deleteObjects successfully");
} catch (ObsException e) {
    System.out.println("deleteObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting Objects](#)
- [\(GitHub\) Sample Code for Object Deletion](#)
- [OBS Error Codes](#)

## 10.8 Copying an Object (SDK for Java)

### Function

This API copies an object stored in OBS to another path. You can create a backup up to 5 GB for an object in a specified bucket in one single operation.

You can use this API to create a copy for the object in a specified bucket.

### Restrictions

- To copy an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- You must have the read permission on the source object.
- 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.
- Cross-bucket replication in the same region is supported, but cross-region replication is not supported.
- An object copy can be up to 5 GB in size. If the source object exceeds 5 GB, you can only perform a [multipart copy](#).
- If the source object is in the Archive storage class, you must restore it first.

### Method

obsClient.copyObject([CopyObjectRequest request](#))

### Request Parameters

**Table 10-49** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">CopyObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for copying an object. For details, see <a href="#">Table 10-50</a> .

**Table 10-50** CopyObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Target bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those</li> </ul>

Parameter	Type	Mandatory (Yes/No)	Description
			<p>set in the first creation request.</p> <p><b>Default value:</b> None</p>
objectKey	String	Yes	<p><b>Explanation:</b> Target object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.e u-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header used for encrypting the target object. For details, see <a href="#">Table 10-51</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header used for encrypting the target object. For details, see <a href="#">Table 10-52</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 10-56</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 10-57</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

Parameter	Type	Mandatory (Yes/No)	Description
successRedirect-Location	String	No	<p><b>Explanation:</b>                      Address (URL) to which a successfully answered request is redirected.</p> <ul style="list-style-type: none"> <li>• If the value is valid and the request is successful, OBS returns status code <b>303. Location</b> contains <b>SuccessActionRedirect</b> as well as the bucket name, object name, and object ETag.</li> <li>• If the value is invalid, OBS ignores this parameter. In such case, the <b>Location</b> header is the object address, and OBS returns a status code based on whether the operation succeeds or fails.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sourceBucketName	String	Yes	<p><b>Explanation:</b> Name of the source bucket.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those</li> </ul>



Parameter	Type	Mandatory (Yes/No)	Description
			<p>set in the first creation request.</p> <p><b>Default value:</b> None</p>
sourceObjectKey	String	Yes	<p><b>Explanation:</b> Source object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
newObjectMetadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> User-defined metadata of the target object. For details, see <a href="#">Table 10-64</a>.</p> <p><b>Restrictions:</b> <b>replaceMetadata</b> must be used together with <b>newObjectMetadata</b>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
replaceMetadata	boolean	No	<p><b>Explanation:</b> Whether to rewrite the metadata of the source object.</p> <p><b>Restrictions:</b> <b>replaceMetadata</b> must be used together with <b>newObjectMetadata</b>.</p> <p><b>Value range:</b> <b>true:</b> The metadata of the source object is rewritten. <b>false:</b> The metadata of the source object is not rewritten.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifModifiedSince	java.util.Date	No	<p><b>Explanation:</b> The source object is copied if it has been modified since the specified time; otherwise, an exception is thrown.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• If the object copy request includes <b>ifUnmodifiedSince</b>, <b>ifMatchTag</b>, <b>ifModifiedSince</b>, or <b>ifNoneMatchTag</b>, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code <b>412 precondition failed</b> returned.</li> <li>• <b>ifModifiedSince</b> and <b>ifNoneMatchTag</b> can be used together. So do <b>ifUnmodifiedSince</b> and <b>ifMatchTag</b>.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifUnmodifiedSince	java.util.Date	No	<p><b>Explanation:</b> The source object is copied if it has not been modified since the specified time; otherwise, an exception is thrown.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• If the object copy request includes <b>ifUnmodifiedSince</b>, <b>ifMatchTag</b>, <b>ifModifiedSince</b>, or <b>ifNoneMatchTag</b>, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code <b>412 precondition failed</b> returned.</li> <li>• <b>ifModifiedSince</b> and <b>ifNoneMatchTag</b> can be used together. So do <b>ifUnmodifiedSince</b> and <b>ifMatchTag</b>.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the source object is the same as the preset ETag, the object is returned. Otherwise, an error is returned. The ETag of the source object is the MD5 value of it.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• If the object copy request includes <b>ifUnmodifiedSince</b>, <b>ifMatchTag</b>, <b>ifModifiedSince</b>, or <b>ifNoneMatchTag</b>, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code <b>412 precondition failed</b> returned.</li> <li>• <b>ifModifiedSince</b> and <b>ifNoneMatchTag</b> can be used together. So do <b>ifUnmodifiedSince</b> and <b>ifMatchTag</b>.</li> </ul> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifNoneMatchTag	String	No	<p><b>Explanation:</b>                      Preset ETag. If the ETag of the source object is different from the preset ETag, the object is returned. Otherwise, an error is returned. The ETag of the source object is the MD5 value of it.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• If the object copy request includes <b>ifUnmodifiedSince</b>, <b>ifMatchTag</b>, <b>ifModifiedSince</b>, or <b>ifNoneMatchTag</b>, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code <b>412 precondition failed</b> returned.</li> <li>• <b>ifModifiedSince</b> and <b>ifNoneMatchTag</b> can be used together. So do <b>ifUnmodifiedSince</b> and <b>ifMatchTag</b>.</li> </ul> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	<p><b>Explanation:</b> Source object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
sseCHeaderSource	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header used for decrypting the source object. For details, see <a href="#">Table 10-52</a>.</p> <p><b>Default value:</b> None</p>

**Table 10-51** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>kms</b>. For details, see <a href="#">Table 10-53</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 10-54</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 10-52** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 10-55</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 10-54</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 10-53** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 10-54** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 10-55** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 10-56** ACL

Constant	Description
AccessControllist.REST_CANNED_PRIVATE	Private read/write. A bucket or object can only be accessed by its owner.
AccessControllist.REST_CANNED_PUBLIC_READ	Public read. If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket. If this permission is granted on an object, anyone can read the content and metadata of the object.
AccessControllist.REST_CANNED_PUBLIC_READ_WRITE	Public read/write. If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks. If this permission is granted on an object, anyone can read the content and metadata of the object.
AccessControllist.REST_CANNED_PUBLIC_READ_DELIVERED	Public read on a bucket as well as objects in the bucket. If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket. This permission cannot be granted on objects.

Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

**Table 10-57** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	Owner	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 10-58</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set<GrantAndPermission>	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 10-59</a> .

**Table 10-58** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 10-59** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 10-61</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 10-60</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b>  <b>true:</b> The bucket ACL is applied to all objects in the bucket.  <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b>  <b>false</b></p>

**Table 10-60** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACL	READ_ACL	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>

Constant	Default Value	Description
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 10-61** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<b>CanonicalGrantee</b>	<b>CanonicalGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 10-62</a>.</p>
<b>GroupGrantee</b>	<b>GroupGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 10-63</a>.</p> <p><b>Default value:</b> None</p>

**Table 10-62** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b>                      Account (domain) ID of the grantee.</p> <p><b>Value range:</b>                      To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b>                      None</p>
displayName	String	No	<p><b>Parameter description:</b>                      Account name of the grantee.</p> <p><b>Value range:</b>                      To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b>                      None</p>

**Table 10-63** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 10-64** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b>            Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b>            None</p>
cacheControl	String	No	<p><b>Explanation:</b>  <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b>            None</p>
contentType	String	No	<p><b>Explanation:</b>            Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b>            None</p>
expires	String	No	<p><b>Explanation:</b>            The time a cached web page object expires.</p> <p><b>Restrictions:</b>            The time must be in the GMT format.</p> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 10-65</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 10-65** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Responses

**Table 10-66** CopyObjectResult

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None
lastModified	java.util.Date	<b>Explanation:</b> Last time the target object was modified. <b>Default value:</b> None

Parameter	Type	Description
etag	String	<p><b>Explanation:</b>            ETag of the target object. Base64-encoded, 128-bit MD5 value of an object. ETag is the unique identifier of the object contents and is used to determine whether the contents of an object are changed. For example, if the ETag value is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, this indicates the contents of the object are changed. The ETag reflects changes only to the contents of an object, not its metadata. Objects created by the upload and copy operations have unique ETags after being encrypted using MD5.</p> <p><b>Restrictions:</b>            If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b>            The value must contain 32 characters.</p> <p><b>Default value:</b>            None</p>
versionId	String	<p><b>Explanation:</b>            Version ID of the target object.</p> <p><b>Value range:</b>            The value must contain 32 characters.</p> <p><b>Default value:</b>            None</p>

Parameter	Type	Description
copySourceVersionId	String	<p><b>Explanation:</b> Version ID of the source object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Storage class of the target object.</p> <p><b>Value range:</b> See <a href="#">Table 10-65</a>.</p> <p><b>Default value:</b> None</p>

## Code Example: Copying an Object

This example copies object **sourceobjectname** from bucket **sourcebucketname** to bucket **destbucketname** as object **destobjectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CopyObjectResult;
public class CopyObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Copy an object.
            CopyObjectResult result =
                obsClient.copyObject("sourcebucketname", "sourceobjectname", "destbucketname",
                "destobjectname");
            System.out.println("copyObject successfully");
        }
    }
}
```

```
        System.out.println("StatusCode:" + result.getStatusCode());
        System.out.println("Etag:" + result.getEtag());
    } catch (ObsException e) {
        System.out.println("copyObject failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("copyObject failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Copying an Object and Rewriting Object Attributes

This example rewrites object attributes when object **sourceobjectname** is copied from bucket **sourcebucketname** to bucket **destbucketname** as object **destobjectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CopyObjectRequest;
import com.obs.services.model.CopyObjectResult;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.StorageClassEnum;
public class CopyObject002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Rewrite object attributes when copying an object.
            CopyObjectRequest request = new CopyObjectRequest("sourcebucketname", "sourceobjectname",
"destbucketname", "destobjectname");
            // Rewrite object attributes.
            request.setReplaceMetadata(true);
            HashMap<String, String> userHeaders = new HashMap<>();
            userHeaders.put("Content-Type", "image/jpeg");
            request.setUserHeaders(userHeaders);
            CopyObjectResult result = obsClient.copyObject(request);
```



```
        System.out.println("copyObject successfully");
        System.out.println("Etag:" + result.getEtag());
    } catch (ObsException e) {
        System.out.println("copyObject failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("copyObject failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Copying an Object Conditionally

This example specifies conditions when object **sourceobjectname** is copied from bucket **sourcebucketname** to bucket **destbucketname** as object **destobjectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CopyObjectRequest;
import com.obs.services.model.CopyObjectResult;
import java.text.SimpleDateFormat;
public class CopyObject003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set conditions for the copy.
            CopyObjectRequest request =
                new CopyObjectRequest("sourcebucketname", "sourceobjectname", "destbucketname",
"destobjectname");
            request.setIfModifiedSince(new SimpleDateFormat("yyyy-MM-dd").parse("2016-01-01"));
            request.setIfNoneMatchTag("none-match-etag");
            CopyObjectResult result = obsClient.copyObject(request);
            System.out.println("copyObject successfully");
            System.out.println("Etag:" + result.getEtag());
        } catch (ObsException e) {
```

```
        System.out.println("copyObject failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("copyObject failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Copying an Object and Rewriting Access Permissions

This example rewrites the object ACL when object **sourceobjectname** is copied from bucket **sourcebucketname** to bucket **destbucketname** as object **destobjectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.CopyObjectRequest;
import com.obs.services.model.CopyObjectResult;
public class CopyObject004 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Rewrite the object ACL when copying the object.
            CopyObjectRequest request =
                new CopyObjectRequest("sourcebucketname", "sourceobjectname", "destbucketname",
"destobjectname");
            // Rewrite the object ACL to private.
            request.setAcl(AccessControlList.REST_CANNED_PRIVATE);
            CopyObjectResult result = obsClient.copyObject(request);
            System.out.println("copyObject successfully");
            System.out.println("Etag:" + result.getEtag());
        } catch (ObsException e) {
            System.out.println("copyObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
        }
    }
}
```

```
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("copyObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Copying Objects](#)
- [\(GitHub\) Sample Code for Object Copy](#)
- [OBS Error Codes](#)

# 10.9 Copying an Object - Multipart (SDK for Java)

## Function

This API allows you to upload a part by copying an object or part of this object.

You can call **ObsClient.copyPart** to copy parts.

## Restrictions

- To copy an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- You must have the read permission on the source object.
- 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.
- Cross-bucket replication in the same region is supported, but cross-region replication is not supported.
- If the source object is in the Archive storage class, you must restore it first.

## Method

obsClient.copyPart([CopyPartRequest request](#))

## Request Parameters

**Table 10-67** List of request parameters

Parameter	Type	Mandator y (Yes/No)	Description
request	<a href="#">CopyPartRe quest</a>	Yes	<b>Explanation:</b> Request parameters for copying an object. For details, see <a href="#">Table 10-68</a> .

**Table 10-68** CopyPartRequest

Parameter	Type	Mandatory (Yes/No)	Description
sourceBucketName	String	Yes	<p><b>Explanation:</b>                      Name of the source bucket.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sourceObjectKey	String	Yes	<p><b>Explanation:</b>            Source object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>            The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
destinationBucket-Name	String	Yes	<p><b>Explanation:</b> Target bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
destinationObjectKey	String	Yes	<p><b>Explanation:</b> Target object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
byteRangeStart	Long	No	<p><b>Explanation:</b> Start position for the multipart copy</p> <p><b>Value range:</b> A non-negative integer, in bytes.</p> <p><b>Default value:</b> 0</p>
byteRangeEnd	Long	No	<p><b>Explanation:</b> End position for the multipart copy</p> <p><b>Restrictions:</b> The value must be greater than that of <b>RangeStart</b>. The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Value range:</b> A non-negative integer, in bytes.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
sseCHeaderSource	SseCHeader	No	<b>Explanation:</b> Server-side header used for decrypting the source object. For details, see <a href="#">Table 10-69</a> .
sseCHeaderDestination	SseCHeader	No	<b>Explanation:</b> Server-side encryption header used for encrypting the target object. For details, see <a href="#">Table 10-69</a> . <b>Restrictions:</b> If the object uploaded to a server is encrypted with the key provided by the client, the key must also be provided in the message for downloading the object.
versionId	String	No	<b>Explanation:</b> Version ID of the source object, for example, <b>G001117FCE89978B0000401205D5DC9A</b> . If the source object has multiple versions, you can specify this parameter. <b>Value range:</b> The value must contain 32 characters. <b>Default value:</b> None
partNumber	int	Yes	<b>Explanation:</b> Part number. <b>Value range:</b> An integer ranging from 1 to 10000 <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
uploadId	String	Yes	<p><b>Explanation:</b> Multipart upload ID, for example, <b>000001648453845DBB78F2340DD460D8</b>.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

**Table 10-69** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 10-70</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 10-71</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCKey	byte[]	Yes	<b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format. <b>Default value:</b> None
sseCKeyBase64	String	No	<b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used. <b>Default value:</b> None

**Table 10-70** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 10-71** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

## Responses

**Table 10-72** CopyPartResult

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None
partNumber	int	<b>Explanation:</b> Part number. <b>Value range:</b> An integer ranging from 1 to 10000. <b>Default value:</b> None

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
lastModified	java.util.Date	<p><b>Explanation:</b> Last time the target part was modified.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example copies object **sourceobjectname** in parts from bucket **sourcebucketname** to bucket **destbucketname** as object **destobjectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.CompleteMultipartUploadRequest;
import com.obs.services.model.CopyPartRequest;
import com.obs.services.model.CopyPartResult;
import com.obs.services.model.InitiateMultipartUploadRequest;
import com.obs.services.model.InitiateMultipartUploadResult;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.PartEtag;
import java.util.ArrayList;
import java.util.Collections;
import java.util.List;
import java.util.concurrent.ExecutorService;
import java.util.concurrent.Executors;
import java.util.concurrent.TimeUnit;
public class CopyPart001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Copy parts.
            final String destBucketName = "destbucketname";
            final String destObjectKey = "destobjectname";
            final String sourceBucketName = "sourcebucketname";
            final String sourceObjectKey = "sourceobjectname";
            // Initialize the thread pool.
            ExecutorService executorService = Executors.newFixedThreadPool(20);
            // Initiate a multipart upload.
            InitiateMultipartUploadRequest request = new InitiateMultipartUploadRequest(destBucketName,
destObjectKey);
            InitiateMultipartUploadResult result = obsClient.initiateMultipartUpload(request);
            final String uploadId = result.getUploadId();
            System.out.println("uploadId:" + uploadId + "\n");
            // Obtain information about the large object.
            ObjectMetadata metadata = obsClient.getObjectMetadata(sourceBucketName, sourceObjectKey);
            // Set the part size to 100 MB.
            long partSize = 100 * 1024 * 1024L;
            long objectSize = metadata.getContentLength();
            // Calculate the number of parts to be copied.
            long partCount = objectSize % partSize == 0 ? objectSize / partSize : objectSize / partSize + 1;
            final List<PartEtag> partEtags = Collections.synchronizedList(new ArrayList<>());
            // Start copying parts concurrently.
            for (int i = 0; i < partCount; i++) {
                // Start position for copying parts
                final long rangeStart = i * partSize;
                // End position for copying parts
                final long rangeEnd = (i + 1 == partCount) ? objectSize - 1 : rangeStart + partSize - 1;
                // Set the part number.
                final int partNumber = i + 1;
                executorService.execute(
                    new Runnable() {
```

```
@Override
public void run() {
    CopyPartRequest request = new CopyPartRequest();
    request.setUploadId(uploadId);
    request.setSourceBucketName(sourceBucketName);
    request.setSourceObjectKey(sourceObjectKey);
    request.setDestinationBucketName(destBucketName);
    request.setDestinationObjectKey(destObjectKey);
    request.setByteRangeStart(rangeStart);
    request.setByteRangeEnd(rangeEnd);
    request.setPartNumber(partNumber);
    CopyPartResult result;
    try {
        result = obsClient.copyPart(request);
        System.out.println("Part#" + partNumber + " done\n");
        partEtags.add(new PartEtag(result.getEtag(), result.getPartNumber()));
    } catch (ObsException e) {
        e.printStackTrace();
    }
}

});

}

// Wait until the copy is complete.
executorService.shutdown();
while (!executorService.isTerminated()) {
    try {
        executorService.awaitTermination(5, TimeUnit.SECONDS);
    } catch (InterruptedException e) {
        e.printStackTrace();
    }
}

// Assemble parts.
CompleteMultipartUploadRequest completeMultipartUploadRequest =
    new CompleteMultipartUploadRequest(destBucketName, destObjectKey, uploadId, partEtags);
obsClient.completeMultipartUpload(completeMultipartUploadRequest);
System.out.println("copyObject successfully");
} catch (ObsException e) {
    System.out.println("copyObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("copyObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Initiating a Multipart Upload](#)
- [Uploading a Part](#)
- [Completing a Multipart Upload](#)
- [Copying a Part](#)
- [\(GitHub\) Sample Code for Multipart Uploads](#)
- [OBS Error Codes](#)

## 10.10 Checking Whether an Object Exists (SDK for Java)

### Function

This API checks whether an object exists. If the returned HTTP status code is **200**, the object exists. If the returned HTTP status code is **404**, the object or bucket does not exist.

### Restrictions

- To check whether an object exists, you must be the bucket owner or have the required permission (**obs:bucket:ListBucket** in IAM or **ListBucket** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).

### Method

doesObjectExist(final [GetObjectMetadataRequest request](#))

### Request Parameters

**Table 10-73** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectMetadataRequest</a>	Yes	<b>Explanation:</b> Request parameters. For details, see <a href="#">Table 10-74</a> .



**Table 10-74** GetObjectMetadataRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
userHeaders	HashMap<String, String>	No	<p><b>Explanation:</b> User header list. In <b>HashMap</b>, the <b>String</b> key and value indicate the name and value of the user header field respectively. The SDK does not process the <b>userHeaders</b> and instead transparently transmits it to the server for later use.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to encode and decode HTTP headers.</p> <p><b>Value range:</b> <b>true:</b> HTTP headers are encoded and decoded. <b>false:</b> HTTP headers are not encoded or decoded.</p> <p><b>Default value:</b> <b>true</b></p>
sseHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption headers. For details, see <a href="#">Table 10-75</a>.</p>

**Table 10-75** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 10-76</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 10-77</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseCKey	byte[]	Yes	<b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format. <b>Default value:</b> None
sseCKeyBase64	String	No	<b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used. <b>Default value:</b> None

**Table 10-76** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 10-77** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

## Responses

**Table 10-78** Response headers

Method	Return Value Type	Description
doesObjectExist(final <a href="#">GetObjectMetadataRequest</a> request)	boolean	Whether the object exists in the bucket.

## Code Examples

This example checks whether object **objectname** exists in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DoesObjectExist001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Check whether the specified object exists.
            System.out.println(obsClient.doesObjectExist("examplebucket", "objectname") ? "exists!" : "does
            not exist!");
            System.out.println("doesObjectExist successfully");
        } catch (ObsException e) {
            System.out.println("doesObjectExist failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("doesObjectExist failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [OBS Error Codes](#)

# 11 Temporarily Authorized Access (SDK for Java)

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## 11.1 Accessing OBS Using a Signed URL (SDK for Java)

### Function

ObsClient allows you to create a URL with **Query** parameters that carry authentication information by specifying the AK and SK, HTTP method, and request parameters. You can provide this URL to other users for them to make a temporary access. When generating a URL, you need to specify the validity period of the URL to restrict the access duration of visitors.

If you want to grant other users the permission to perform operations on buckets or objects (for example, upload or download objects), you need to generate a URL for the corresponding request (for example, a URL with the PUT request for uploading an object) and provide the URL to other users.

If a CORS or signature mismatch error occurs, refer to the following steps to troubleshoot the issue:

1. If CORS is not configured, you need to configure CORS rules on OBS Console. For details, see [Configuring CORS](#).
2. If the signatures do not match, check whether signature parameters are correct. For details, see [Authentication of Signature in a URL](#). For example, during an object upload, the backend uses **Content-Type** to calculate the signature and generate an authorized URL, but if **Content-Type** is not set or is set to an incorrect value when the frontend uses the authorized URL, a CORS error occurs. To avoid this issue, ensure that **Content-Type** fields are the same at the frontend and backend.
3. A CDN acceleration domain name cannot be used to create a signed URL.

The following table lists operations that can be performed through a signed URL.

**Table 11-1** HttpMethodEnum & SpecialParamEnum

Operation	HTTP Request Method (Value in OBS SDK for Java)	Special Operator (Value in OBS SDK for Java)	Bucket Name Required (Yes/No)	Object Name Required (Yes/No)
Create Bucket	HttpMethodEnum.PUT	N/A	Yes	No
List Buckets	HttpMethodEnum.GET	N/A	No	No
Delete Bucket	HttpMethodEnum.DELETE	N/A	Yes	No
List Objects	HttpMethodEnum.GET	N/A	Yes	No
List Object Versions	HttpMethodEnum.GET	SpecialParamEnum.VERSIONS	Yes	No
List Multipart Uploads	HttpMethodEnum.GET	SpecialParamEnum.UPLOADS	Yes	No
Get Bucket Metadata	HttpMethodEnum.HEAD	N/A	Yes	No
Get Bucket Location	HttpMethodEnum.GET	SpecialParamEnum.LOCATION	Yes	No
Get Bucket Storageinfo	HttpMethodEnum.GET	SpecialParamEnum.STORAGEINFO	Yes	No
Set Bucket Quota	HttpMethodEnum.PUT	SpecialParamEnum.QUOTA	Yes	No
Get Bucket Quota	HttpMethodEnum.GET	SpecialParamEnum.QUOTA	Yes	No
Set Bucket Storage Policy	HttpMethodEnum.PUT	SpecialParamEnum.STORAGEPOLICY	Yes	No
Get Bucket Storage Policy	HttpMethodEnum.GET	SpecialParamEnum.STORAGEPOLICY	Yes	No
Set Bucket ACL	HttpMethodEnum.PUT	SpecialParamEnum.ACL	Yes	No
Get Bucket ACL	HttpMethodEnum.GET	SpecialParamEnum.ACL	Yes	No

Operation	HTTP Request Method (Value in OBS SDK for Java)	Special Operator (Value in OBS SDK for Java)	Bucket Name Required (Yes/No)	Object Name Required (Yes/No)
Set Bucket Logging	HttpMethodEnum.PUT	SpecialParamEnum.LOGGING	Yes	No
Get Bucket Logging	HttpMethodEnum.GET	SpecialParamEnum.LOGGING	Yes	No
Set Bucket Policy	HttpMethodEnum.PUT	SpecialParamEnum.POLICY	Yes	No
Get Bucket Policy	HttpMethodEnum.GET	SpecialParamEnum.POLICY	Yes	No
Delete Bucket Policy	HttpMethodEnum.DELETE	SpecialParamEnum.POLICY	Yes	No
Set Lifecycle Rule	HttpMethodEnum.PUT	SpecialParamEnum.LIFECYCLE	Yes	No
Get Lifecycle Rule	HttpMethodEnum.GET	SpecialParamEnum.LIFECYCLE	Yes	No
Delete Lifecycle Rule	HttpMethodEnum.DELETE	SpecialParamEnum.LIFECYCLE	Yes	No
Set Website Hosting	HttpMethodEnum.PUT	SpecialParamEnum.WEBSITE	Yes	No
Get Website Hosting	HttpMethodEnum.GET	SpecialParamEnum.WEBSITE	Yes	No
Delete Website Hosting	HttpMethodEnum.DELETE	SpecialParamEnum.WEBSITE	Yes	No
Set Bucket Versioning	HttpMethodEnum.PUT	SpecialParamEnum.VERSIONING	Yes	No
Get Bucket Versioning	HttpMethodEnum.GET	SpecialParamEnum.VERSIONING	Yes	No
Set CORS Rule	HttpMethodEnum.PUT	SpecialParamEnum.CORS	Yes	No
Get CORS Rule	HttpMethodEnum.GET	SpecialParamEnum.CORS	Yes	No
Delete CORS Rule	HttpMethodEnum.DELETE	SpecialParamEnum.CORS	Yes	No



Operation	HTTP Request Method (Value in OBS SDK for Java)	Special Operator (Value in OBS SDK for Java)	Bucket Name Required (Yes/No)	Object Name Required (Yes/No)
Set Bucket Tagging	HttpMethodEnum.PUT	SpecialParamEnum.TAGGING	Yes	No
Get Bucket Tagging	HttpMethodEnum.GET	SpecialParamEnum.TAGGING	Yes	No
Delete Bucket Tagging	HttpMethodEnum.DELETE	SpecialParamEnum.TAGGING	Yes	No
Upload Object	HttpMethodEnum.PUT	N/A	Yes	Yes
Append Object	HttpMethodEnum.POST	SpecialParamEnum.APPEND	Yes	Yes
Get Object	HttpMethodEnum.GET	N/A	Yes	Yes
Copy Object	HttpMethodEnum.PUT	N/A	Yes	Yes
Delete Object	HttpMethodEnum.DELETE	N/A	Yes	Yes
Delete Objects	HttpMethodEnum.POST	SpecialParamEnum.DELETE	Yes	Yes
Get Object Metadata	HttpMethodEnum.HEAD	N/A	Yes	Yes
Set Object ACL	HttpMethodEnum.PUT	SpecialParamEnum.ACL	Yes	Yes
Get Object ACL	HttpMethodEnum.GET	SpecialParamEnum.ACL	Yes	Yes
Initiate Multipart Upload	HttpMethodEnum.POST	SpecialParamEnum.UPLOADS	Yes	Yes
Upload Part	HttpMethodEnum.PUT	N/A	Yes	Yes
Copy Part	HttpMethodEnum.PUT	N/A	Yes	Yes
List Parts	HttpMethodEnum.GET	N/A	Yes	Yes

Operation	HTTP Request Method (Value in OBS SDK for Java)	Special Operator (Value in OBS SDK for Java)	Bucket Name Required (Yes/No)	Object Name Required (Yes/No)
Assemble Parts	HttpMethodEnum.P OST	N/A	Yes	Yes
Delete Multipart Upload	HttpMethodEnum. DELETE	N/A	Yes	Yes
Restore Archive Object	HttpMethodEnum.P OST	SpecialParamEnum.R ESTORE	Yes	Yes

To access OBS using a signed URL generated by the OBS SDK for Java, perform the following steps:

**Step 1** Call `ObsClient.createTemporarySignature` to generate a signed URL.

**Step 2** Use an HTTP library to make an HTTP/HTTPS request to OBS.

----End

## Method

`obsClient.createTemporarySignature(TemporarySignatureRequest request)`

## Request Parameters

**Table 11-2** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">TemporarySignatureRequest</a>	Yes	<b>Explanation:</b> Request parameters for creating a signed URL. For details, see <a href="#">Table 11-3</a> .

**Table 11-3** TemporarySignatureRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	No	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	No	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
specialParam	<b>SpecialParamEnum</b>	No	<p><b>Explanation:</b> Special parameters that may be used in the request, indicating the sub-operations.</p> <p><b>Value range:</b> See <a href="#">Table 11-1</a>.</p> <p><b>Default value:</b> None</p>
method	<b>HttpMethodEnum</b>	Yes	<p><b>Explanation:</b> HTTP method type.</p> <p><b>Value range:</b> See <a href="#">Table 11-1</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
headers	Map<String, String>	No	<b>Explanation:</b> Headers in the request. In <b>Map</b> , the <b>String</b> key and value indicate the name and value of the request header respectively. <b>Default value:</b> None
queryParams	Map<String, Object>	No	<b>Explanation:</b> Query parameters in the request. In <b>Map</b> , the <b>String</b> key indicates the name of the query parameter, and the <b>Object</b> value indicates the value of the query parameter. <b>Default value:</b> None
expires	long	Yes	<b>Explanation:</b> Expiration time of the signed URL. <b>Value range:</b> An integer greater than or equal to 0, in seconds. <b>Default value:</b> 300
requestDate	Date	Yes	<b>Explanation:</b> Time when the request is initiated. <b>Default value:</b> None

## Responses

**Table 11-4** TemporarySignatureResponse

Parameter	Type	Description
signedUrl	String	<b>Explanation:</b> The signed URL that carries the authentication information. <b>Default value:</b> None
actualSignedRequestHeaders	Map<String, String>	<b>Explanation:</b> Actual headers in the request initiated using the signed URL. In <b>Map</b> , the <b>String</b> key and value indicate the name and value of the request header respectively. <b>Default value:</b> None

### Code Example: Creating a Bucket

This example uses **HttpMethodEnum.PUT** to create bucket **examplebucket** based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.RequestBody;
import okhttp3.Response;
import java.util.Map;
public class CreateBucket001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
```

```
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the validity period of the URL to 3600 seconds.
    long expireSeconds = 3600L;
    TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.PUT,
expireSeconds);
    request.setBucketName("examplebucket");
    TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
    System.out.println("Creating bucket using temporary signature url:");
    System.out.println("\t" + response.getSignedUrl());
    Request.Builder builder = new Request.Builder();
    for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
        builder.header(entry.getKey(), entry.getValue());
    }
    // Make a PUT request to create a bucket.
    String location = "your bucket location";
    Request httpRequest =
        builder.url(response.getSignedUrl())
            .put(
                RequestBody.create(
                    null,
                    "<CreateBucketConfiguration><Location>"
                        + location
                        + "</Location></CreateBucketConfiguration>".getBytes())
            ).build();
    OkHttpClient httpClient =
        new OkHttpClient.Builder()
            .followRedirects(false)
            .retryOnConnectionFailure(false)
            .cache(null)
            .build();
    Call c = httpClient.newCall(httpRequest);
    Response res = c.execute();
    System.out.println("\tStatus:" + res.code());
    if (res.body() != null) {
        System.out.println("\tContent:" + res.body().string() + "\n");
    }
    res.close();
    System.out.println("CreateBucket successfully");
} catch (ObsException e) {
    System.out.println("CreateBucket failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("CreateBucket failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Uploading an Object

This example uses **HttpMethodEnum.PUT** to upload object **objectname** to bucket **examplebucket** based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.MediaType;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.RequestBody;
import okhttp3.Response;
import java.util.HashMap;
import java.util.Map;
public class PutObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the validity period of the URL to 3600 seconds.
            long expireSeconds = 3600L;
            Map<String, String> headers = new HashMap<>();
            String contentType = "text/plain";
            headers.put("Content-Type", contentType);
            TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.PUT,
            expireSeconds);
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            request.setHeaders(headers);
            TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
            System.out.println("Creating object using temporary signature url:");
            System.out.println("\t" + response.getSignedUrl());
            Request.Builder builder = new Request.Builder();
            for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
                builder.header(entry.getKey(), entry.getValue());
            }
            // Make a PUT request to upload an object.
            Request httpRequest =
                builder.url(response.getSignedUrl())
                    .put(RequestBody.create(MediaType.parse(contentType), "Hello
OBS".getBytes("UTF-8")))
                    .build();
            OkHttpClient httpClient =
                new OkHttpClient.Builder()
```



```
        .followRedirects(false)
        .retryOnConnectionFailure(false)
        .cache(null)
        .build();
    Call c = httpClient.newCall(httpRequest);
    Response res = c.execute();
    System.out.println("Status:" + res.code());
    if (res.body() != null) {
        System.out.println("Content:" + res.body().string() + "\n");
    }
    res.close();
    System.out.println("PutObject successfully");
} catch (ObsException e) {
    System.out.println("PutObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("PutObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Downloading an Object

This example uses `HttpMethodEnum.GET` to download object `objectname` from bucket `examplebucket` based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.Response;
import java.io.InputStream;
import java.util.Map;
public class GetObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
```

```
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the validity period of the URL to 3600 seconds.
    long expireSeconds = 3600L;
    TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.GET,
expireSeconds);
    request.setBucketName("examplebucket");
    request.setObjectKey("objectname");
    TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
    System.out.println("Getting object using temporary signature url:");
    System.out.println("SignedUrl:" + response.getSignedUrl());
    Request.Builder builder = new Request.Builder();
    for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
        builder.header(entry.getKey(), entry.getValue());
    }
    // Make a GET request to download an object.
    Request httpRequest = builder.url(response.getSignedUrl()).get().build();
    OkHttpClient httpClient =
        new OkHttpClient.Builder()
            .followRedirects(false)
            .retryOnConnectionFailure(false)
            .cache(null)
            .build();
    Call c = httpClient.newCall(httpRequest);
    Response res = c.execute();
    System.out.println("Status:" + res.code());
    InputStream objectContent = null;
    if (res.body() != null) {
        objectContent = res.body().byteStream();
        System.out.println("Content:" + res.body().string() + "\n");
    }
    if(objectContent != null) {
        // objectContent is the file stream to download.
        // You can read the objectContent stream to download the file. If the stream is not read for a
long time, it will be disconnected from the server.
    }
    res.close();
    System.out.println("getObject successfully");
} catch (ObsException e) {
    System.out.println("getObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing Objects

This example uses **HttpMethodEnum.GET** to list object in bucket **examplebucket** based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.Response;
import java.util.Map;
public class ListObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the validity period of the URL to 3600 seconds.
            long expireSeconds = 3600L;
            TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.GET,
expireSeconds);
            request.setBucketName("examplebucket");
            TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
            System.out.println("Getting object list using temporary signature url:");
            System.out.println("\t" + response.getSignedUrl());
            Request.Builder builder = new Request.Builder();
            for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
                builder.header(entry.getKey(), entry.getValue());
            }
            // Make a GET request to obtain the object list.
            Request httpRequest = builder.url(response.getSignedUrl()).get().build();
            OkHttpClient httpClient =
                new OkHttpClient.Builder()
                    .followRedirects(false)
                    .retryOnConnectionFailure(false)
                    .cache(null)
                    .build();
            Call c = httpClient.newCall(httpRequest);
            Response res = c.execute();
            System.out.println("Status:" + res.code());
            if (res.body() != null) {
                System.out.println("Content:" + res.body().string() + "\n");
            }
            res.close();
            System.out.println("ListObject successfully");
        } catch (ObsException e) {
            System.out.println("ListObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
        }
    }
}
```

```
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("ListObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Deleting an Object

This example uses `HttpMethodEnum.DELETE` to delete object **objectname** from bucket **examplebucket** based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.Response;
import java.util.Map;
public class DeleteObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the validity period of the URL to 3600 seconds.
            long expireSeconds = 3600L;
            TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.DELETE,
            expireSeconds);
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
            System.out.println("Deleting object using temporary signature url:");
            System.out.println("\t" + response.getSignedUrl());
            Request.Builder builder = new Request.Builder();
            for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
                builder.header(entry.getKey(), entry.getValue());
            }
            // Make a DELETE request to delete an object.
            Request httpRequest = builder.url(response.getSignedUrl()).delete().build();
```

```
OkHttpClient httpClient =
    new OkHttpClient.Builder()
        .followRedirects(false)
        .retryOnConnectionFailure(false)
        .cache(null)
        .build();
Call c = httpClient.newCall(httpRequest);
Response res = c.execute();
System.out.println("\tStatus:" + res.code());
if (res.body() != null) {
    System.out.println("\tContent:" + res.body().string() + "\n");
}
res.close();
System.out.println("deleteObjects successfully");
} catch (ObsException e) {
    System.out.println("deleteObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Initiating a Multipart Upload

This example uses **HttpMethodEnum.POST** to initiate a multipart upload based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.SpecialParamEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.RequestBody;
import okhttp3.Response;
import java.util.Map;
public class InitiateMultiPartUpload001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
    }
}
```

```
// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Set the validity period of the URL to 3600 seconds.
    long expireSeconds = 3600L;
    TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.POST,
expireSeconds);
    request.setBucketName("examplebucket");
    request.setObjectKey("objectname");
    request.setSpecialParam(SpecialParamEnum.UPLOADS);
    TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
    System.out.println("initiate multipart upload using temporary signature url:");
    System.out.println("\t" + response.getSignedUrl());
    Request.Builder builder = new Request.Builder();
    for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
        builder.header(entry.getKey(), entry.getValue());
    }
    // Make a POST request to initiate the multipart upload.
    Request httpRequest = builder.url(response.getSignedUrl()).post(RequestBody.create(null,
"")).build();
    OkHttpClient httpClient =
        new OkHttpClient.Builder()
            .followRedirects(false)
            .retryOnConnectionFailure(false)
            .cache(null)
            .build();
    Call c = httpClient.newCall(httpRequest);
    Response res = c.execute();
    System.out.println("Status:" + res.code());
    if (res.body() != null) {
        System.out.println("Content:" + res.body().string() + "\n");
    }
    res.close();
    System.out.println("InitiateMultiPartUpload successfully");
} catch (ObsException e) {
    System.out.println("InitiateMultiPartUpload failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("InitiateMultiPartUpload failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Uploading a Part

This example uses **HttpMethodEnum.PUT** to upload a part based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
```

```
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.RequestBody;
import okhttp3.Response;
import java.util.HashMap;
import java.util.Map;
public class UploadPart001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the validity period of the URL to 3600 seconds.
            long expireSeconds = 3600L;
            TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.PUT,
            expireSeconds);
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            Map<String, Object> queryParams = new HashMap<String, Object>();
            // Set the partNumber parameter, for example, queryParams.put("partNumber", "1").
            queryParams.put("partNumber", "partNumber");
            queryParams.put("uploadId", "your uploadId");
            request.setQueryParams(queryParams);
            TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
            System.out.println("upload part using temporary signature url:");
            System.out.println("SignedUrl:" + response.getSignedUrl());
            Request.Builder builder = new Request.Builder();
            for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
                builder.header(entry.getKey(), entry.getValue());
            }
            // Make a PUT request to upload a part.
            Request httpRequest =
                builder.url(response.getSignedUrl())
                    .put(RequestBody.create(null, new byte[6 * 1024 * 1024]))
                    .build();
            OkHttpClient httpClient =
                new OkHttpClient.Builder()
                    .followRedirects(false)
                    .retryOnConnectionFailure(false)
                    .cache(null)
                    .build();
            Call c = httpClient.newCall(httpRequest);
            Response res = c.execute();
            System.out.println("Status:" + res.code());
            if (res.body() != null) {
                System.out.println("Content:" + res.body().string() + "\n");
            }
            res.close();
            System.out.println("UploadPart successfully");
        } catch (ObsException e) {
```

```
        System.out.println("UploadPart failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("UploadPart failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Listing Uploaded Parts

This example uses **HttpMethodEnum.PUT** to list uploaded parts based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.Response;
import java.util.HashMap;
import java.util.Map;
public class ListUploadedParts001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the validity period of the URL to 3600 seconds.
            long expireSeconds = 3600L;
            TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.GET,
            expireSeconds);
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            Map<String, Object> queryParams = new HashMap<String, Object>();
            queryParams.put("uploadId", "your uploadId");
            request.setQueryParams(queryParams);
```



```
TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
System.out.println("list parts using temporary signature url:");
System.out.println("\t" + response.getSignedUrl());
Request.Builder builder = new Request.Builder();
for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
    builder.header(entry.getKey(), entry.getValue());
}
// Make a GET request to list uploaded parts.
Request httpRequest = builder.url(response.getSignedUrl()).get().build();
OkHttpClient httpClient =
    new OkHttpClient.Builder()
        .followRedirects(false)
        .retryOnConnectionFailure(false)
        .cache(null)
        .build();
Call c = httpClient.newCall(httpRequest);
Response res = c.execute();
System.out.println("Status:" + res.code());
if (res.body() != null) {
    System.out.println("Content:" + res.body().string() + "\n");
}
res.close();
System.out.println("ListParts successfully");
} catch (ObsException e) {
    System.out.println("ListParts failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("ListParts failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Assembling Parts

This example uses **HttpMethodEnum.POST** to assemble parts based on a signed URL. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.MediaType;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.RequestBody;
import okhttp3.Response;
import java.util.HashMap;
import java.util.Map;
public class CompleteMultiPartUpload001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
```

```
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
// Set the validity period of the URL to 3600 seconds.
long expireSeconds = 3600L;
TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.POST,
expireSeconds);
request.setBucketName("examplebucket");
request.setObjectKey("objectname");
Map<String, String> headers = new HashMap<>();
String contentType = "application/xml";
headers.put("Content-Type", contentType);
request.setHeaders(headers);
Map<String, Object> queryParams = new HashMap<>();
queryParams.put("uploadId", "your uploadId");
request.setQueryParams(queryParams);
TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
System.out.println("complete multipart upload using temporary signature url:");
System.out.println("\t" + response.getSignedUrl());
Request.Builder builder = new Request.Builder();
for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
builder.header(entry.getKey(), entry.getValue());
}
// The following content is used as an example. You need to replace it with the responses of the
request for listing uploaded parts.
String content = "<CompleteMultipartUpload>";
content += "<Part>";
content += "<PartNumber>1</PartNumber>";
content += "<ETag>da6a0d097e307ac52ed9b4ad551801fc</ETag>";
content += "</Part>";
content += "<Part>";
content += "<PartNumber>2</PartNumber>";
content += "<ETag>da6a0d097e307ac52ed9b4ad551801fc</ETag>";
content += "</Part>";
content += "</CompleteMultipartUpload>";
// Make a POST request to assemble the uploaded parts.
Request httpRequest =
builder.url(response.getSignedUrl())
.post(RequestBody.create(MediaType.parse(contentType), content.getBytes("UTF-8")))
.build();
OkHttpClient httpClient =
new OkHttpClient.Builder()
.followRedirects(false)
.retryOnConnectionFailure(false)
.cache(null)
.build();
Call c = httpClient.newCall(httpRequest);
Response res = c.execute();
System.out.println("\tStatus:" + res.code());
if (res.body() != null) {
System.out.println("\tContent:" + res.body().string() + "\n");
}
res.close();
} catch (ObsException e) {
System.out.println("CompleteMultiPartUpload failed");
}
```

```
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("CompleteMultiPartUpload failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Downloading an Object Encrypted Using SSE-C

This example uses **HttpMethodEnum.GET** to download an object encrypted using SSE-C. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.HttpMethodEnum;
import com.obs.services.model.TemporarySignatureRequest;
import com.obs.services.model.TemporarySignatureResponse;
import okhttp3.Call;
import okhttp3.OkHttpClient;
import okhttp3.Request;
import okhttp3.Response;
import java.util.HashMap;
import java.util.Map;
public class GetObject003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Download an object encrypted using SSE-C.
            // Set the validity period of the URL to 3600 seconds.
            long expireSeconds = 3600L;
            TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.GET,
            expireSeconds);
            request.setBucketName("examplebucket");
            request.setObjectKey("objectname");
            // Set the encryption method to SSE-C.
            Map<String, String> headers = new HashMap<>();
            headers.put("x-obs-server-side-encryption-customer-algorithm", "AES256");
```

```
// Set the key used for encryption, which is a Base64-encoded 256-bit value.
headers.put(
    "x-obs-server-side-encryption-customer-key",
    "your base64 sse-c key generated by AES-256 algorithm");
// Set the MD5 value of the key used for encryption, which is a Base64-encoded, 128-bit MD5 value.
headers.put("x-obs-server-side-encryption-customer-key-MD5", "the md5 value of your sse-c key");
request.setHeaders(headers);
TemporarySignatureResponse response = obsClient.createTemporarySignature(request);
System.out.println("Getting object using temporary signature url:");
System.out.println("\t" + response.getSignedUrl());
Request.Builder builder = new Request.Builder();
for (Map.Entry<String, String> entry : response.getActualSignedRequestHeaders().entrySet()) {
    builder.header(entry.getKey(), entry.getValue());
}
// Make a GET request to download an object.
Request httpRequest = builder.url(response.getSignedUrl()).get().build();
OkHttpClient httpClient =
    new OkHttpClient.Builder()
        .followRedirects(false)
        .retryOnConnectionFailure(false)
        .cache(null)
        .build();
Call c = httpClient.newCall(httpRequest);
Response res = c.execute();
System.out.println("Status:" + res.code());
if (res.body() != null) {
    System.out.println("Content:" + res.body().string() + "\n");
}
res.close();
System.out.println("getObject successfully");
} catch (ObsException e) {
    System.out.println("getObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

#### NOTE

- **HttpMethodEnum** is an enumeration function defined in OBS SDK for Java, whose value indicates the request method types.
- For details about the encryption key calculation, see [How Do I Generate an SSE-C Encryption Key?](#)

## Helpful Links

- [Pre-signed URLs](#)
- [OBS Error Codes](#)

# 12 Versioning (SDK for Java)

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## 12.1 Overview (SDK for Java)

OBS can store multiple versions of an object. You can quickly search for and restore different versions as well as restore data in the event of misoperations or application faults.

For more information, see [Versioning](#).

## 12.2 Configuring Versioning for a Bucket (SDK for Java)

### Function

OBS keeps multiple versions of an object in a versioning-enabled bucket. That way you can quickly retrieve and restore every object version as needed, or recover data from both accidental actions and application failures. For more information, see [Versioning](#).

This API configures the versioning status for a bucket.

### Restrictions

- To configure versioning for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketVersioning** in IAM or **PutBucketVersioning** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.setBucketVersioning(final [SetBucketVersioningRequest request](#))

## Request Parameters

**Table 12-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetBucketVersioningRequest</a>	Yes	<b>Explanation:</b> Request parameters for bucket versioning configuration. For details, see <a href="#">Table 12-2</a> .

**Table 12-2** SetBucketVersioningRequest

Parameter	Type	Man dato ry (Yes /No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
status	<b>VersioningSt atusEnum</b>	Yes	<p><b>Explanation:</b> Versioning status of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 12-3</a>.</p>

**Table 12-3** VersioningStatusEnum

Constant	Default Value	Description
SUSPENDED	Suspended	Versioning is suspended.
ENABLED	Enabled	Versioning is enabled.

## Responses

**Table 12-4** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example enables and suspends versioning of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketVersioningConfiguration;
import com.obs.services.model.VersioningStatusEnum;
public class SetBucketVersioning001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
```



```
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Enable versioning.
    obsClient.setBucketVersioning(
        "examplebucket", new BucketVersioningConfiguration(VersioningStatusEnum.ENABLED));
    // Suspend versioning.
    obsClient.setBucketVersioning(
        "examplebucket", new BucketVersioningConfiguration(VersioningStatusEnum.SUSPENDED));
    System.out.println("setBucketVersioning successfully");
} catch (ObsException e) {
    System.out.println("setBucketVersioning failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketVersioning failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Configuring Versioning for a Bucket](#)
- [\(GitHub\) Sample Code for Configuring Versioning Status for a Bucket](#)
- [OBS Error Codes](#)
- [Versioning FAQ](#)

## 12.3 Obtaining the Versioning Status of a Bucket (SDK for Java)

### Function

OBS keeps multiple versions of an object in a versioning-enabled bucket. That way you can quickly retrieve and restore every object version as needed, or recover data from both accidental actions and application failures. For more information, see [Versioning](#).

This API obtains the versioning status of a bucket.

## Restrictions

- To view the versioning status of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketVersioning** in IAM or **GetBucketVersioning** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

## Method

obsClient.getBucketVersioning(final [BaseBucketRequest request](#))

## Request Parameters

Table 12-5 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters for viewing the versioning status of a bucket. For details, see <a href="#">Table 12-6</a> .

**Table 12-6** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• A bucket name must be unique across all accounts and regions.</li><li>• A bucket name:<ul style="list-style-type: none"><li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li><li>– Cannot be formatted as an IP address.</li><li>– Cannot start or end with a hyphen (-) or period (.).</li><li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li><li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li></ul></li><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>

## Responses

**Table 12-7** BucketVersioningConfiguration

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
status	<a href="#">VersioningStatusEnum</a>	<p><b>Explanation:</b> Versioning status of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 12-8</a>.</p>

**Table 12-8** VersioningStatusEnum

Constant	Default Value	Description
SUSPENDED	Suspended	Versioning is suspended.
ENABLED	Enabled	Versioning is enabled.

## Code Examples

This example views the versioning status of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketVersioningConfiguration;
public class GetBucketVersioning001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
    }
}
```

```
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // View the versioning status of a bucket.
    BucketVersioningConfiguration status = obsClient.getBucketVersioning("examplebucket");
    System.out.println("getBucketVersioning successfully");
    System.out.println("getVersioningStatus:" + status.getVersioningStatus());
} catch (ObsException e) {
    System.out.println("getBucketVersioning failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getBucketVersioning failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining Bucket Versioning Status](#)
- [\(GitHub\) Sample Code for Viewing Versioning Status for a Bucket](#)
- [OBS Error Codes](#)
- [Versioning FAQ](#)

## 12.4 Obtaining an Object Version (SDK for Java)

### Function

You can call **ObsClient.getObject** to obtain an object version by specifying the version ID (**versionId**).

## Restrictions

- To download an object, you must be the bucket owner or have the required permission (**obs:object:GetObject** in IAM or **GetObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- Objects in the Archive storage class can be downloaded only after they are restored.

## Method

obsClient.getObject([GetObjectRequest request](#))

## Request Parameters

**Table 12-9** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for downloading an object. For details, see <a href="#">Table 12-10</a> .

**Table 12-10** GetObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>            Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID. If version ID is <b>null</b>, the object of the latest version will be downloaded, by default.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
rangeStart	Long	No	<p><b>Explanation:</b> Start position for object download.</p> <p><b>Value range:</b> A non-negative integer.</p> <p><b>Default value:</b> None</p>
rangeEnd	Long	No	<p><b>Explanation:</b> End position for object download.</p> <p><b>Restrictions:</b> The upper limit of the value is the object length minus 1, in bytes.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
IfModifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
IfUnmodifiedSince	Date	No	<p><b>Explanation:</b> The object is returned if it has not been modified since the specified time; otherwise, an error is returned.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header. For details, see <a href="#">Table 12-15</a>.</p>
replaceMetadata	<a href="#">ObjectReplaceMetadata</a>	No	<p><b>Explanation:</b> Additional information about the object. For details, see <a href="#">Table 12-11</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	<a href="#">ProgressListener</a>	No	<b>Explanation:</b> Data transmission listener for obtaining the download progress. For details, see <a href="#">Table 12-12</a> .

**Table 12-11** ObjectReplaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. <b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a> <b>Default value:</b> None
contentTypeLanguage	String	No	<b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol. <b>Default value:</b> None
expires	String	No	<b>Explanation:</b> <b>Expires</b> header in the response. It specifies the cache expiration time of the web page when the object is downloaded. <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	<b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded. <b>Default value:</b> None
contentDisposition	String	No	<b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box. <b>Default value:</b> None
contentEncoding	String	No	<b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object in a download. <b>Default value:</b> None

**Table 12-12** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 12-13</a> . <b>Default value:</b> None

**Table 12-13** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<b>Explanation:</b> Progress data. For details, see <a href="#">Table 12-14</a> .  <b>Default value:</b> None

**Table 12-14** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 12-15** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> AES256, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 12-17</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 12-16</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 12-16** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 12-17** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 12-18** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 12-19** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 12-20** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b>            Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b>            None</p>
cacheControl	String	No	<p><b>Explanation:</b>  <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b>            None</p>
contentType	String	No	<p><b>Explanation:</b>            Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b>            None</p>
expires	String	No	<p><b>Explanation:</b>            The time a cached web page object expires.</p> <p><b>Restrictions:</b>            The time must be in the GMT format.</p> <p><b>Default value:</b>            None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the file data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 12-19</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 12-21** ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
owner	<a href="#">Owner</a>	<b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 12-18</a> .
metadata	<a href="#">ObjectMetadata</a>	<b>Explanation:</b> Object metadata. For details, see <a href="#">Table 12-20</a> .
objectContent	InputStream	<b>Explanation:</b> Object data stream. <b>Default value:</b> None

## Code Examples

This example sets the version ID to obtain object versions and views the versioning status of object **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObsObject;
public class GetObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the version ID to obtain object versions.
            ObsObject obsObject = obsClient.getObject("examplebucket", "objectname", "versionid1");
            System.out.println("getObject successfully");
            obsObject.getObjectContent().close();
        } catch (ObsException e) {
            System.out.println("getObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
        }
    }
}
```

```
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("getObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Downloading Object Versions](#)
- [OBS Error Codes](#)
- [FAQ for Object Download Failure](#)

# 12.5 Copying an Object Version (SDK for Java)

## Function

This API copies an object version in a specified bucket.

You can call **ObsClient.copyObject** to copy an object version by specifying the version ID (**versionId**).

## Restrictions

- To copy an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- You must have the read permission on the source object.
- 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.
- Cross-bucket replication in the same region is supported, but cross-region replication is not supported.
- An object copy can be up to 5 GB in size. If the source object exceeds 5 GB, you can only perform a [multipart copy](#).
- If the source object is in the Archive storage class, you must restore it first.

## Method

obsClient.copyObject([CopyObjectRequest request](#))

## Request Parameters

**Table 12-22** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">CopyObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for copying an object. For details, see <a href="#">Table 12-23</a> .

**Table 12-23** CopyObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Target bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.)</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>



Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Target object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header used for encrypting the target object. For details, see <a href="#">Table 12-24</a>.</p> <p><b>Default value:</b> None</p>
sseCHeader	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side encryption header used for encrypting the target object. For details, see <a href="#">Table 12-25</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> ACL that can be pre-defined during the object copy. For details, see <a href="#">Table 12-29</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
successRedirect-Location	String	No	<p><b>Explanation:</b>            Address (URL) to which a successfully answered request is redirected.</p> <ul style="list-style-type: none"> <li>• If the value is valid and the request is successful, OBS returns status code <b>303</b>. <b>Location</b> contains <b>SuccessActionRedirect</b> as well as the bucket name, object name, and object ETag.</li> <li>• If the value is invalid, OBS ignores this parameter. In such case, the <b>Location</b> header is the object address, and OBS returns a status code based on whether the operation succeeds or fails.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sourceBucketName	String	Yes	<p><b>Explanation:</b>            Name of the source bucket.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:               <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>            None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sourceObjectKey	String	Yes	<p><b>Explanation:</b> Source object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
newObjectMetadata	<b>ObjectMetadata</b>	No	<p><b>Explanation:</b> User-defined metadata of the target object. For details, see <a href="#">Table 12-36</a>.</p> <p><b>Restrictions:</b> <b>newObjectMetadata</b> must be used together with <b>replaceMetadata</b>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandator y (Yes/No)	Description
replaceMetad ata	boolean	No	<p><b>Explanation:</b> Whether to rewrite the metadata of the source object.</p> <p><b>Restrictions:</b> <b>replaceMetadata</b> must be used together with <b>newObjectMetadata</b>.</p> <p><b>Value range:</b> <b>true:</b> The metadata of the source object is rewritten. <b>false:</b> The metadata of the source object is not rewritten.</p> <p><b>Default value:</b> None</p>
ifModifiedSince	java.util.Date	No	<p><b>Explanation:</b> The source object is copied if it has been modified since the specified time; otherwise, an exception is thrown.</p> <p><b>Default value:</b> None</p>
ifUnmodifiedSin ce	java.util.Date	No	<p><b>Explanation:</b> The source object is copied if it has not been modified since the specified time; otherwise, an exception is thrown.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is the same as the preset ETag, the object is returned. Otherwise, an error is returned. The ETag of the source object is the MD5 value of it.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>If the object copy request includes <b>ifUnmodifiedSince</b>, <b>ifMatchTag</b>, <b>ifModifiedSince</b>, or <b>ifNoneMatchTag</b>, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code <b>412 precondition failed</b> returned.</li> <li><b>ifModifiedSince</b> and <b>ifNoneMatchTag</b> can be used together. So do <b>ifUnmodifiedSince</b> and <b>ifMatchTag</b>.</li> </ul> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
ifNoneMatchTag	String	No	<p><b>Explanation:</b> Preset ETag. If the ETag of the object to be downloaded is different from the preset ETag, the object is returned. Otherwise, an error is returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	<p><b>Explanation:</b> Version ID of the source object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
sseCHeaderSource	<a href="#">SseCHeader</a>	No	<p><b>Explanation:</b> Server-side decryption header used for decrypting the source object. For details, see <a href="#">Table 12-25</a>.</p> <p><b>Default value:</b> None</p>

**Table 12-24** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 12-26</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 12-27</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 12-25** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 12-28</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 12-27</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 12-26** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 12-27** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 12-28** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 12-29** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	<b>Owner</b>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 12-30</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 12-31</a> .

**Table 12-30** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b>                      Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b>                      To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b>                      None</p>
displayName	String	No	<p><b>Explanation:</b>                      Account name of the owner.</p> <p><b>Value range:</b>                      To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b>                      None</p>

**Table 12-31** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b>                      Grantees (users or user groups). For details, see <a href="#">Table 12-33</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b>                      Permissions to grant.</p> <p><b>Value range:</b>                      See <a href="#">Table 12-32</a>.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 12-32** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACL	READ_ACL	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>

Constant	Default Value	Description
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 12-33** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<b>CanonicalGrantee</b>	<b>CanonicalGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 12-34</a>.</p>
<b>GroupGrantee</b>	<b>GroupGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 12-35</a>.</p> <p><b>Default value:</b> None</p>

**Table 12-34** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 12-35** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 12-36** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the file data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 12-37</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 12-37** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

## Responses

**Table 12-38** CopyObjectResult

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None
lastModified	java.util.Date	<b>Explanation:</b> Last time the target object was modified. <b>Default value:</b> None

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> ETag of the target object. Base64-encoded, 128-bit MD5 value of an object. ETag is the unique identifier of the object contents and is used to determine whether the contents of an object are changed. For example, if the ETag value is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, this indicates the contents of the object are changed. The ETag reflects changes only to the contents of an object, not its metadata. Objects created by the upload and copy operations have unique ETags after being encrypted using MD5.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Version ID of the target object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
copySourceVersionId	String	<p><b>Explanation:</b> Version ID of the source object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Storage class of the target object.</p> <p><b>Value range:</b> See <a href="#">Table 12-37</a>.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example sets a version ID to copy object versions of **sourceobjectname** from bucket **sourceexamplebucket** to another bucket.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CopyObjectRequest;
public class CopyObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Copy object versions.
            CopyObjectRequest request = new CopyObjectRequest();
            request.setSourceBucketName("sourceexamplebucket");
            request.setSourceObjectKey("sourceobjectname");
            // Set the version ID of the object to be copied.
```

```
request.setVersionId("versionid");
request.setDestinationBucketName("destexamplebucket");
request.setDestinationObjectKey("destobjectname");
obsClient.copyObject(request);
System.out.println("copyObject successfully");
} catch (ObsException e) {
    System.out.println("copyObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("copyObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Copying Objects](#)
- [OBS Error Codes](#)

## 12.6 Restoring a Specific Archive Object Version (SDK for Java)

### Function

This API downloads an Archive object. To download such an object, you must restore it first. For the options for the restore speed, see [Table 12-41](#).

You can call **ObsClient.restoreObject** to restore an Archive object version by specifying **versionId**.

### Restrictions

- To restore an Archive object, you must be the bucket owner or have the required permission (**obs:object:RestoreObject** in IAM or **RestoreObject** in a bucket policy.) For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- The object specified in **ObsClient.restoreObject** must be in the Archive storage class. Otherwise, an exception will be thrown when you call this API.

---

#### CAUTION

To prolong the validity period of the Archive data restored, you can repeatedly restore the Archive data, but you will be billed for each restore. After a second restore, the validity period of Standard object copies will be prolonged, and you need to pay for storing these copies during the prolonged period.

---

## Method

obsClient.restoreObject([RestoreObjectRequest request](#))

## Request Parameters

**Table 12-39** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">RestoreObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for restoring an Archive object version. For details, see <a href="#">Table 12-40</a> .



**Table 12-40** RestoreObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Version ID of the Archive object to restore.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None. If this parameter is left blank, the latest version of the object is specified.</p>

Parameter	Type	Mandatory (Yes/No)	Description
days	int	Yes	<p><b>Explanation:</b> After an object is restored, a Standard copy is generated for the object. This parameter specifies how long the Standard copy can be retained, that is, the validity period of the restored object.</p> <p><b>Restrictions:</b> The value must be a positive integer.</p> <p><b>Value range:</b> The value ranges from 1 to 30, in days.</p> <p><b>Default value:</b> None</p>
tier	<a href="#">RestoreTierEnum</a>	No	<p><b>Explanation:</b> The restore option, which indicates the time spent on restoring the object.</p> <p><b>Value range:</b> For details, see <a href="#">Table 12-41</a>.</p> <p><b>Default value:</b> Standard</p>

**Table 12-41** RestoreTierEnum

Constant	Default Value	Description
EXPEDITED	Expedited	Objects can be restored at an expedited speed within 1 to 5 minutes.
STANDARD	Standard	Objects can be restored at a standard speed within 3 to 5 hours.

## Responses

**Table 12-42** RestoreObjectStatus

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example restores object version **objectname** in bucket **examplebucket** at an expedited speed and retains the restored object for one day.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObsObject;
import com.obs.services.model.RestoreObjectRequest;
import com.obs.services.model.RestoreTierEnum;
public class RestoreObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
```

```
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Restore an object version at an expedited speed.
    RestoreObjectRequest request = new RestoreObjectRequest("examplebucket", "objectname", 1);
    request.setRestoreTier(RestoreTierEnum.EXPEDITED);
    request.setVersionId("versionid");
    obsClient.restoreObject(request);
    System.out.println("RestoreObject successfully");
} catch (ObsException e) {
    System.out.println("RestoreObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("RestoreObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Restoring Archive Objects](#)
- [\(GitHub\) Sample Code for Restoring an Archive Object](#)
- [OBS Error Codes](#)

## 12.7 Listing Object Versions (SDK for Java)

### Function

This API lists some or all of the object versions in a bucket. When listing the object versions, you can specify the criteria such as the prefix, number, and start position. Returned object versions are listed in alphabetical order by object name.

The returned results of **ObsClient.listVersions** include the object versions and delete markers.

### Restrictions

- To list object versions in a bucket, you must be the bucket owner or have the required permission (**obs:bucket:ListBucketVersions** in IAM or **ListBucketVersions** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- A maximum of 1,000 object versions can be returned in a single request. If a bucket contains more than 1,000 object versions, you can use [pagination](#) to list all versions. If **ListVersionsResult.isTruncated** is **true**, only part of object versions are returned. In this case, you can use **ListVersionsResult.getNextKeyMarker** and

`ListVersionsResult.getNextVersionIdMarker` to obtain the start position for the next listing.

## Method

`obsClient.listVersions(ListVersionsRequest request)`

## Request Parameters

**Table 12-43** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">ListVersionsRequest</a>	Yes	<b>Explanation:</b> Request parameters for listing object versions in a bucket. For details, see <a href="#">Table 12-44</a> .

**Table 12-44** ListVersionsRequest parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
prefix	String	No	<p><b>Explanation:</b> Prefix that the names of objects to list must contain.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
keyMarker	String	No	<p><b>Explanation:</b>            Object name to start with when listing object versions in a bucket. All object versions following this parameter are listed in alphabetical order.</p> <p><b>Restrictions:</b>            This parameter is only available for listing objects with multiple versions.</p> <p><b>Value range:</b>            The value of <b>nextKeyMarker</b> in the response body of the last request.</p> <p><b>Default value:</b>            None</p>
maxKeys	int	No	<p><b>Explanation:</b>            The maximum number of object versions returned in the response in alphabetical order.</p> <p><b>Value range:</b>            The value ranges from 1 to 1000. If the specified value is beyond this range, only 1,000 objects are returned.</p> <p><b>Default value:</b>            1000</p>



Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	<p><b>Explanation:</b></p> <p>This parameter is used to group object names. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one <b>CommonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>CommonPrefixes</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefix</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, objects <b>abcd</b> and <b>abcde</b> are grouped into a <b>commonPrefix</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>commonPrefix</b> with <b>bbcd</b> as the prefix.</p> <p>For a PFS, if this parameter is not specified, all the contents in the current directory are recursively listed by default, and subdirectories are also listed. In big data scenarios, PFSs usually have multiple directory levels and each directory level has a large number of files. In such case, you are advised to configure <b>[delimiter=/]</b> to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing.</p> <p><b>Value range:</b></p> <p>The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Type	Mandatory (Yes/No)	Description
versionIdMarker	String	No	<p><b>Explanation:</b> Version ID you want to start listing from. All object versions following the value specified by this parameter are listed in alphabetical order by object name and version ID. This parameter must be used together with <b>keyMarker</b>. <b>keyMarker</b> specifies the object name, and <b>versionIdMarker</b> specifies the version of the specified object.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>This parameter is only available for listing objects with multiple versions.</li> <li>If the object version specified by <b>versionIdMarker</b> and the object name specified by <b>keyMarker</b> do not match, <b>versionIdMarker</b> is invalid.</li> </ul> <p><b>Value range:</b> Object version ID, that is, the value of <b>nextVersionIdMarker</b> in the response body of the last request.</p> <p><b>Default value:</b> None</p>
encodingType	String	No	<p><b>Explanation:</b> Encoding type for some elements in the response. If <b>delimiter</b>, <b>keyMarker</b>, <b>prefix</b>, <b>nextKeyMarker</b>, and <b>key</b> contain control characters that are not supported by the XML 1.0 standard, you can set <b>encodingType</b> to encode <b>delimiter</b>, <b>keyMarker</b>, <b>prefix</b> (including the <b>prefix</b> in <b>commonPrefixes</b>), <b>nextKeyMarker</b>, and <b>key</b> in the response.</p> <p><b>Value range:</b> <b>url</b></p> <p><b>Default value:</b> None. If you leave this parameter blank, encoding is not applied.</p>

## Responses

**Table 12-45** ListVersionsResult

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"><li>• A bucket name must be unique across all accounts and regions.</li><li>• A bucket name:<ul style="list-style-type: none"><li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li><li>– Cannot be formatted as an IP address.</li><li>– Cannot start or end with a hyphen (-) or period (.).</li><li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li><li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li></ul></li><li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li></ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
prefix	String	<p><b>Explanation:</b> Object name prefix.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you specify <b>logs/</b> as the prefix, <b>logs/day1</b>, <b>logs/day2</b>, and <b>logs/day3</b> will be returned. If this parameter is null and there are no other filter criteria, all objects in the bucket will be returned.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionIdMarker	String	<p><b>Explanation:</b> Object version for the object specified by <b>KeyMarker</b>. All object versions following the value specified by this parameter are listed in alphabetical order by object name and version ID. This parameter must be used together with <b>KeyMarker</b>. <b>KeyMarker</b> specifies the object name, and <b>versionIdMarker</b> specifies the version of the specified object.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• This parameter is only available for listing objects with multiple versions.</li> <li>• If the object version specified by <b>versionIdMarker</b> and the object name specified by <b>keyMarker</b> do not match, <b>versionIdMarker</b> is invalid.</li> </ul> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
nextVersionIdMarker	String	<p><b>Explanation:</b> Version ID to start with in the next request for listing object versions. It must be used together with <b>nextKeyMarker</b>. If only part of the object versions are returned for the current request, this parameter is included in the response for your use in the subsequent request.</p> <p><b>Restrictions:</b> This parameter is only available for listing objects with multiple versions.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
objectSummaries	List<ObsObject>	<p><b>Explanation:</b> Object information. For details, see <a href="#">Table 12-46</a>.</p>
commonPrefixes	List<String>	<p><b>Explanation:</b> List of object name prefixes grouped according to the <b>delimiter</b> parameter (if specified)</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
truncated	boolean	<p><b>Explanation:</b> Whether all objects are returned in the response. A maximum of 1,000 objects can be listed at a time. If the number of objects is greater than 1,000, the objects beyond 1,000 cannot be returned.</p> <p><b>Value range:</b> <b>true:</b> Not all objects are returned. <b>false:</b> All objects are returned.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
keyMarker	String	<p><b>Explanation:</b> Object name to start listing from. All object versions following the value specified by this parameter are listed in alphabetical order by object name.</p> <p><b>Restrictions:</b> This parameter is only available for listing objects with multiple versions.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
maxKeys	int	<p><b>Explanation:</b> Maximum number of objects to list. No more than the specified number of objects can be returned in the response in alphabetical order.</p> <p><b>Value range:</b> The value ranges from 1 to 1000. If the specified value is beyond this range, only 1,000 objects are returned.</p> <p><b>Default value:</b> 1000</p>

Parameter	Type	Description
delimiter	String	<p><b>Explanation:</b></p> <p>Object names are grouped by this parameter, which is often used with <b>Prefix</b>. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one <b>CommonPrefixes</b>. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one <b>CommonPrefixes</b>.</p> <p>Assume that a bucket has objects <b>abcd</b>, <b>abcde</b>, and <b>bbcde</b> in it. If <b>delimiter</b> is set to <b>d</b> and <b>prefix</b> is set to <b>a</b>, files <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix. If only <b>delimiter</b> is set to <b>d</b>, files <b>abcd</b> and <b>abcde</b> are grouped into a <b>CommonPrefixes</b> with <b>abcd</b> as the prefix, and <b>bbcde</b> is grouped separately into another <b>CommonPrefixes</b> with <b>bbcde</b> as the prefix.</p> <p>For a PFS, if this parameter is not specified, all the contents in the current directory are recursively listed by default, and subdirectories are also listed. In big data scenarios, PFSs usually have multiple directory levels and each directory level has a large number of files. In such case, you are advised to configure <b>[delimiter=/]</b> to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing.</p> <p><b>Value range:</b></p> <p>The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b></p> <p>None</p>

Parameter	Type	Description
nextKeyMarker	String	<p><b>Explanation:</b> Object name to start with for the next request for listing object versions. If only part of the object versions are returned for the current request, this parameter is included in the response for your use in the subsequent request.</p> <p><b>Restrictions:</b> This parameter is only available for listing objects with multiple versions.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
location	String	<p><b>Explanation:</b> Region where a bucket is located.</p> <p><b>Restrictions:</b> If the endpoint used is <b>obs.myhuaweicloud.eu</b>, this parameter is not required. If any other endpoints are used, this parameter is required.</p> <p><b>Default value:</b> If <b>obs.myhuaweicloud.eu</b> is used as the endpoint and no region is specified, <b>eu-west-101</b> (the EU-Dublin region) is used by default.</p>
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Description
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
versions	<a href="#">VersionOrDeleteMarker[]</a>	<p><b>Explanation:</b> Object version information. For details, see <a href="#">Table 12-50</a>.</p>

**Table 12-46** ObsObject

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
owner	<a href="#">Owner</a>	<p><b>Explanation:</b> Owner of the object. For details, see <a href="#">Table 12-47</a>.</p>
metadata	<a href="#">ObjectMetadata</a>	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 12-48</a>.</p>
objectContent	InputStream	<p><b>Explanation:</b> Object data stream.</p> <p><b>Default value:</b> None</p>

**Table 12-47** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the bucket owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	<p><b>Explanation:</b>                      Account name of the owner.</p> <p><b>Value range:</b>                      To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b>                      None</p>

**Table 12-48** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b>                      Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The object size in a single upload ranges from 0 to 5 GB.</li> <li>• To upload files larger than 5 GB, <a href="#">multipart uploads</a> should be used.</li> </ul> <p><b>Default value:</b>                      If this parameter is not specified, the SDK automatically calculates the size of the object.</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the file data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <code>n58IG6hfM7vqI4K0vnWpog==</code></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
storageClasses	StorageClassEnum	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 12-49</a>.</p> <p><b>Default value:</b> None</p>
websiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 12-49** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 12-50** VersionOrDeleteMarker

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>



Parameter	Type	Description
key	String	<b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b> , the object name is <b>folder/test.txt</b> . <b>Value range:</b> The value must contain 1 to 1,024 characters. <b>Default value:</b> None
versionId	String	<b>Explanation:</b> Object version ID. <b>Value range:</b> The value must contain 32 characters. <b>Default value:</b> None
isLatest	boolean	<b>Explanation:</b> Whether the object is the latest version. <b>Value range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The object is the latest version.</li><li>• <b>false:</b> The object is not the latest version.</li></ul> <b>Default value:</b> <b>false</b>

Parameter	Type	Description
lastModified	Date	<b>Explanation:</b> Time when the object was last modified. <b>Value range:</b> UTC time <b>Default value:</b> None
owner	<b>Owner</b>	<b>Explanation:</b> User information, including the domain ID and name of the object owner. For details, see <a href="#">Table 12-47</a> .

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> Base64-encoded, 128-bit MD5 value of an object. ETag is the unique identifier of the object contents and is used to determine whether the contents of an object are changed. For example, if the ETag value is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, this indicates the contents of the object are changed. The ETag reflects changes only to the contents of an object, not its metadata. Objects created by the upload and copy operations have unique ETags after being encrypted using MD5.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
size	long	<p><b>Explanation:</b> Object size, in bytes.</p> <p><b>Value range:</b> The value ranges from 0 TB to 48.8 TB, in bytes.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 12-49</a>.</p> <p><b>Default value:</b> None</p>
isDeleteMarker	boolean	<p><b>Explanation:</b> Whether the object version is a delete marker.</p> <p><b>Value range:</b> <b>true:</b> The object version is a delete marker. <b>false:</b> The object version is not a delete marker.</p> <p><b>Default value:</b> None</p>

### Code Example: Listing Object Versions in a Bucket

This example lists object versions in bucket **examplebucket**. A maximum of 1,000 object versions can be returned.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
```

```
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk,endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Listing object versions.
    ListVersionsResult result = obsClient.listVersions("examplebucket");
    System.out.println("listVersions successfully");
    for (VersionOrDeleteMarker v : result.getVersions()) {
        System.out.println("Key:" + v.getKey());
        System.out.println("Owner:" + v.getOwner());
        System.out.println("isDeleteMarker:" + v.isDeleteMarker());
    }
} catch (ObsException e) {
    System.out.println("listVersions failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listVersions failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Specifying the Version Count to List

This example lists a specified number of object versions in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
    }
}
```

```
try {
    // List a specified number of object versions.
    ListVersionsResult result = obsClient.listVersions("examplebucket", 100);
    System.out.println("listVersions successfully");
    for (VersionOrDeleteMarker v : result.getVersions()) {
        System.out.println("Key:" + v.getKey());
        System.out.println("Owner:" + v.getOwner());
        System.out.println("isDeleteMarker:" + v.isDeleteMarker());
    }
} catch (ObsException e) {
    System.out.println("listVersions failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listVersions failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Specifying the Version Prefix to List

This example specifies a prefix to list object versions in bucket **examplebucket**. A maximum of 100 object versions will be returned.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsRequest;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions003 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List object versions by specifying a prefix.
            // List 100 object versions with the specified prefix.
            ListVersionsRequest request = new ListVersionsRequest("examplebucket", 100);
            request.setPrefix("prefix");
            ListVersionsResult result = obsClient.listVersions(request);
        }
    }
}
```

```
        System.out.println("listVersions successfully");
        for (VersionOrDeleteMarker v : result.getVersions()) {
            System.out.println("Key:" + v.getKey());
            System.out.println("Owner:" + v.getOwner());
            System.out.println("isDeleteMarker:" + v.isDeleteMarker());
        }
    } catch (ObsException e) {
        System.out.println("listVersions failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code:" + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code:" + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message:" + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("listVersions failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Code Example: Specifying the Start Position to List

This example lists 100 object versions whose names follow **test** in lexicographical order in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsRequest;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions004 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List objects from a specified start position.
            // List 100 object versions whose names following test in lexicographic order.
            ListVersionsRequest request = new ListVersionsRequest("examplebucket", 100);
            request.setKeyMarker("test");
            ListVersionsResult result = obsClient.listVersions(request);
            System.out.println("listVersions successfully");
            for (VersionOrDeleteMarker v : result.getVersions()) {
                System.out.println("Key:" + v.getKey());
            }
        } catch (ObsException e) {
            System.out.println("listVersions failed");
            e.printStackTrace();
        }
    }
}
```

```
        System.out.println("Owner:" + v.getOwner());
        System.out.println("isDeleteMarker:" + v.isDeleteMarker());
    }
} catch (ObsException e) {
    System.out.println("listVersions failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listVersions failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Using Pagination to List All Versions

This example lists 100 object versions whose names follow **test** in lexicographical order in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsRequest;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions005 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List all object versions using pagination.
            ListVersionsResult result;
            ListVersionsRequest request = new ListVersionsRequest("examplebucket", 100);
            do {
                result = obsClient.listVersions(request);
                System.out.println("listVersions successfully");
                for (VersionOrDeleteMarker v : result.getVersions()) {
                    System.out.println("Key:" + v.getKey());
                    System.out.println("Owner:" + v.getOwner());
                    System.out.println("isDeleteMarker:" + v.isDeleteMarker());
                }
            }
        }
```



```
        request.setKeyMarker(result.getNextKeyMarker());
        request.setVersionIdMarker(result.getNextVersionIdMarker());
    } while (result.isTruncated());
} catch (ObsException e) {
    System.out.println("listVersions failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listVersions failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing All Object Versions in a Folder

There is no concept of folders in OBS. All elements stored in OBS buckets are objects. Folders are actually objects whose sizes are 0 and whose names end with a slash (/). You can set a folder name as a prefix to list objects in this folder. This example lists all object versions in a folder.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsRequest;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions006 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            //List all object versions in a folder.
            ListVersionsResult result;
            ListVersionsRequest request = new ListVersionsRequest("examplebucket", 100);
            // Set folder name dir/ as the prefix.
            request.setPrefix("dir/");
            do {
                result = obsClient.listVersions(request);
                System.out.println("listVersions successfully");
            } while (result.isTruncated());
        } catch (ObsException e) {
            System.out.println("listVersions failed");
            e.printStackTrace();
        }
    }
}
```

```
        for (VersionOrDeleteMarker v : result.getVersions()) {
            System.out.println("Key:" + v.getKey());
            System.out.println("Owner:" + v.getOwner());
            System.out.println("isDeleteMarker:" + v.isDeleteMarker());
        }
        request.setKeyMarker(result.getNextKeyMarker());
        request.setVersionIdMarker(result.getNextVersionIdMarker());
    } while (result.isTruncated());
} catch (ObsException e) {
    System.out.println("listVersions failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listVersions failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Listing All Object Versions in a Bucket by Folder Name

This example lists all object versions in bucket `examplebucket`.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ListVersionsRequest;
import com.obs.services.model.ListVersionsResult;
import com.obs.services.model.VersionOrDeleteMarker;
public class ListVersions007 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // List all object versions in the root directory.
            ListVersionsRequest request = new ListVersionsRequest("examplebucket", 1000);
            request.setDelimiter("");
            ListVersionsResult result = obsClient.listVersions(request);
            System.out.println("listVersions successfully");
            System.out.println("Objects in the root directory:");
            for (VersionOrDeleteMarker v : result.getVersions()) {
```

```
        System.out.println("Key:" + v.getKey());
        System.out.println("Owner:" + v.getOwner());
        System.out.println("isDeleteMarker:" + v.isDeleteMarker());
    }
    listVersionsByPrefix(obsClient, result);
} catch (ObsException e) {
    System.out.println("listVersions failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("listVersions failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Recursively Listing Object Versions in a Sub-folder

This example recursively lists object versions in a sub-folder.

```
// Recursively list object versions in a sub-folder.
static void listVersionsByPrefix(ObsClient obsClient, ListVersionsResult result) throws ObsException {
    for (String prefix : result.getCommonPrefixes()) {
        System.out.println("Objects in folder [" + prefix + "]:");
        ListVersionsRequest request = new ListVersionsRequest("examplebucket", 1000);
        request.setDelimiter("/");
        request.setPrefix(prefix);
        result = obsClient.listVersions(request);
        for (VersionOrDeleteMarker v : result.getVersions()) {
            System.out.println("Key:" + v.getKey());
            System.out.println("Owner:" + v.getOwner());
            System.out.println("isDeleteMarker:" + v.isDeleteMarker());
        }
        listVersionsByPrefix(obsClient, result);
    }
}
}
```

### NOTE

- The code examples above do not involve scenarios where there are more than 1,000 object versions in a folder.
- Since all folder names end with a slash (/) and the objects and sub-folders to list are under the folder, **delimiter** is always a slash (/).
- In the returned result of each recursion, **ListVersionsResult.getVersions** includes the object versions under the folder, and **ListVersionsResult.getCommonPrefixes** includes the sub-folders under the folder.

## 12.8 Setting an ACL for an Object Version (SDK for Java)

### Function

OBS allows the control of access permissions for objects. By default, only object creators have the read and write permissions on the object. You can set access

control policies for objects. For example, if an object is configured with the public access policy, all users are allowed to read the object. If an object is encrypted with SSE-KMS, the ACL configured for it is not in effect in the cross-tenant case.

You can set an ACL when uploading an object or call an ACL API to modify or obtain the ACL of an existing object.

## Restrictions

- To set an object ACL, you must be the bucket owner or have the required permission (**obs:object:PutObjectAcl** in IAM or **PutObjectAcl** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- An object ACL supports a maximum of 100 grants.

## Method

obsClient.setObjectAcl([SetObjectAclRequest request](#))

## Request Parameters

**Table 12-51** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetObjectAclRequest</a>	Yes	<b>Explanation:</b> Request parameters for setting an object ACL. For details, see <a href="#">Table 12-52</a> .

**Table 12-52** SetObjectAclRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 12-60</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 12-53</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>

**Table 12-53** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	<b>Owner</b>	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 12-54</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 12-55</a> .

**Table 12-54** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 12-55** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 12-56</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 12-59</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>



**Table 12-56** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 12-57</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 12-58</a> . <b>Default value:</b> None

**Table 12-57** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 12-58** GroupGrantee

Constant	Description
ALL_USERS	All users.

Constant	Description
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 12-59** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>

Constant	Default Value	Description
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 12-60** ACL

Constant	Description
AccessControlList.REST_CANNED_PRIVATE	<p>Private read/write.</p> <p>A bucket or object can only be accessed by its owner.</p>
AccessControlList.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControlList.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

## Responses

**Table 12-61** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example sets the ACL for the object version **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
```

```
import com.obs.services.model.AccessControlList;
import com.obs.services.model.GroupGrantee;
import com.obs.services.model.Owner;
import com.obs.services.model.Permission;
public class SetObjectAcl001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the ACL of the object version to private by using a pre-defined access policy.
            obsClient.setObjectAcl("examplebucket", "objectname", AccessControlList.REST_CANNED_PRIVATE,
"versionid");
            AccessControlList acl = new AccessControlList();
            Owner owner = new Owner();
            owner.setId("ownerid");
            acl.setOwner(owner);
            // Grant the read permission to all users.
            acl.grantPermission(GroupGrantee.ALL_USERS, Permission.PERMISSION_READ);
            // Set an ACL for the object version.
            obsClient.setObjectAcl("examplebucket", "objectname", acl, "versionid");
            System.out.println("setObjectAcl successfully");
        } catch (ObsException e) {
            System.out.println("setObjectAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("setObjectAcl failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

#### NOTE

The owner or grantee ID needed in the ACL indicates the account ID, which can be viewed on the **My Credential** page of OBS Console.

## Helpful Links

- [Setting an Object ACL](#)
- [\(GitHub\) Sample Code for Setting an Object ACL](#)
- [OBS Error Codes](#)

## 12.9 Obtaining the ACL of an Object Version (SDK for Java)

### Function

OBS allows the control of access permissions for objects. By default, only object creators have the read and write permissions on the object. You can call an ACL API to modify or obtain the ACL of an existing object.

This API returns the ACL for a specific object version in a bucket.

### Restrictions

- To obtain an object ACL, you must be the bucket owner or have the required permission (**obs:object:GetObjectAcl** in IAM or **GetObjectAcl** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- To call this API, you must have the read permission on the ACL of the object.

### Method

obsClient.getObjectAcl([GetObjectAclRequest request](#))

### Request Parameters

Table 12-62 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">GetObjectAclRequest</a>	Yes	<b>Explanation:</b> Request parameters for obtaining the ACL of the object. For details, see <a href="#">Table 12-63</a> .

**Table 12-63** GetObjectAclRequest parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	Yes	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 12-64** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	<b>Owner</b>	No	<p><b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 12-65</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>
grants	Set< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Grantee information. For details, see <a href="#">Table 12-66</a>.</p>

**Table 12-65** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<p><b>Explanation:</b> Account (domain) ID of the owner.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
display Name	String	No	<p><b>Explanation:</b> Account name of the owner.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 12-66** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 12-67</a>.</p>
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 12-70</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 12-67** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 12-68</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 12-69</a> . <b>Default value:</b> None

**Table 12-68** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 12-69** GroupGrantee

Constant	Description
ALL_USERS	All users.

Constant	Description
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 12-70** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>
PERMISSION_WRITE_ACP	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>

Constant	Default Value	Description
PERMISSION_FULL_CONTROL	FULL_CONTROL	Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.  A grantee with this permission for a bucket has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the bucket.  A grantee with this permission for an object has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the object.

## Code Examples

This example returns the ACL information of object version **objectname** in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
public class GetObjectAcl001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Obtain the ACL of an object version.
            AccessControlList acl = obsClient.getObjectAcl("examplebucket", "objectname", "versionid");
            System.out.println("getObjectAcl successfully");
            System.out.println(acl);
        } catch (ObsException e) {
            System.out.println("getObjectAcl failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
        }
    }
}
```

```
        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("getObjectAcl failed");
        // Print other error information.
        e.printStackTrace();
    }
}
```

## Helpful Links

- [Obtaining Object ACL Configuration](#)
- [\(GitHub\) Sample Code for Obtaining Object ACLs](#)
- [OBS Error Codes](#)

## 12.10 Deleting an Object Version (SDK for Java)

### Function

This API deletes an object from a specific bucket.

You can call **ObsClient.deleteObject** to pass a version ID (**versionId**) to delete an object version.

### Restrictions

- To delete an object, you must be the bucket owner or have the required permission (**obs:object:DeleteObject** in IAM or **DeleteObject** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Configuring an Object Policy](#).
- If versioning is not enabled for a bucket, deleted objects cannot be recovered.

### Method

obsClient.deleteObject([DeleteObjectRequest request](#))

### Request Parameters

**Table 12-71** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">DeleteObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for deleting an object. For details, see <a href="#">Table 12-72</a> .

**Table 12-72** DeleteObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>
versionId	String	No	<p><b>Explanation:</b>                      Object version ID.</p> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None</p>



## Responses

**Table 12-73** DeleteObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
deleteMarker	boolean	<p><b>Explanation:</b> Whether the deleted object is a delete marker.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> The deleted object is a delete marker.</li> <li>• <b>false:</b> The deleted object is not a delete marker.</li> </ul> <p><b>Default value:</b> <b>false</b></p>

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example passes a version ID (**versionId**) to delete an object version using **ObsClient.deleteObject**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteObject001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Delete the object version.
            obsClient.deleteObject("examplebucket", "objectname", "versionid");
            System.out.println("deleteObject successfully");
        } catch (ObsException e) {
            System.out.println("deleteObject failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
        }
    }
}
```

```
System.out.println("Error Message:" + e.getMessage());  
// Request failed. Print the request ID.  
System.out.println("Request ID:" + e.getErrorRequestId());  
System.out.println("Host ID:" + e.getErrorHostId());  
e.printStackTrace();  
} catch (Exception e) {  
    System.out.println("deleteObject failed");  
    // Print other error information.  
    e.printStackTrace();  
}  
}
```

## Helpful Links

- [Deleting an Object](#)
- [\(GitHub\) Sample Code for Object Deletion](#)
- [OBS Error Codes](#)

## 12.11 Batch Deleting Object Versions (SDK for Java)

### Function

This API deletes objects in batches from a specific bucket. Deleted objects cannot be recovered.

In a batch delete operation, OBS concurrently deletes the specified objects and returns the deletion result of each object.

You can call **ObsClient.deleteObjects** to pass version IDs (**versionId**) to delete object versions.

### Restrictions

- To delete objects in a batch, you must be the bucket owner or have the required permission (**obs:object:DeleteObject** in IAM or **DeleteObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- If versioning is not enabled for a bucket, deleted objects cannot be recovered.
- 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, if an internal error occurs during cyclic deletion of multiple objects, an object may be deleted in the index data but still exist in the metadata.

### Method

obsClient.deleteObjects([DeleteObjectsRequest deleteRequest](#))

## Request Parameters

**Table 12-74** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
deleteRequest	DeleteObjectsRequest	Yes	<b>Explanation:</b> Request parameters for deleting objects in batches. For details, see <a href="#">Table 12-75</a> .

**Table 12-75** DeleteObjectsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
keyAndVersions	List< <a href="#">Key AndVersion</a> >	Yes	<p><b>Explanation:</b> List of objects to be deleted. For details, see <a href="#">Table 12-76</a>.</p>

Parameter	Type	Mandatory (Yes/No)	Description
quiet	boolean	No	<p><b>Explanation:</b> Response mode to the request for deleting objects in a batch.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>false:</b> The detailed mode. Results of both successful and failed deletions are returned.</li> <li>• <b>true:</b> The quiet mode. Only results of failed deletions are returned.</li> </ul> <p><b>Default value:</b> <b>false</b></p>
encodingType	String	No	<p><b>Explanation:</b> Encoding type for <b>objectKey</b> in the response. If <b>objectKey</b> in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode <b>objectKey</b>.</p> <p><b>Value range:</b> <b>url</b></p> <p><b>Default value:</b> None. If you leave this parameter blank, encoding is not applied.</p>

**Table 12-76** KeyAndVersion

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	<p><b>Explanation:</b>                      Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b>                      The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b>                      None</p>
versionId	String	No	<p><b>Explanation:</b>                      Object version ID.</p> <p><b>Value range:</b>                      The value must contain 32 characters.</p> <p><b>Default value:</b>                      None. If this parameter is left blank, the latest version of the object is deleted.</p>

## Responses

**Table 12-77** DeleteObjectsResult

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None
deletedObjectResults	List< <a href="#">DeleteObjectResult</a> >	<b>Explanation:</b> Response results of the request for deleting objects in a batch. For details, see <a href="#">Table 12-78</a> .
errorResults	List< <a href="#">ErrorResult</a> >	<b>Explanation:</b> List of objects that fail to be deleted. For details, see <a href="#">Table 12-79</a> .



**Table 12-78** DeleteObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
deleteMarker	boolean	<p><b>Explanation:</b> Whether the deleted object is a delete marker.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> The deleted object is a delete marker.</li> <li>• <b>false:</b> The deleted object is not a delete marker.</li> </ul> <p><b>Default value:</b> <b>false</b></p>

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

**Table 12-79** ErrorResult

Parameter	Type	Description
versionId	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
errorCode	String	<p><b>Explanation:</b> Error code for the failed deletion. For details, see <a href="#">OBS Error Codes</a>.</p>

Parameter	Type	Description
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
message	String	<p><b>Explanation:</b> Error message for the failed deletion. For details, see <a href="#">OBS Error Codes</a>.</p>

## Code Examples

This example passes multiple version IDs (**versionId**) to batch delete object versions using **ObsClient.deleteObjects**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.DeleteObjectsRequest;
import com.obs.services.model.DeleteObjectsResult;
import com.obs.services.model.KeyAndVersion;
import java.util.ArrayList;
import java.util.List;
public class DeleteObjects001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
```

```
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Delete object versions in a batch.
    DeleteObjectsRequest request = new DeleteObjectsRequest("examplebucket");
    request.setQuiet(false);
    List<KeyAndVersion> toDelete = new ArrayList<KeyAndVersion>();
    toDelete.add(new KeyAndVersion("objectname1", "versionid1"));
    toDelete.add(new KeyAndVersion("objectname2", "versionid2"));
    toDelete.add(new KeyAndVersion("objectname3", "versionid3"));
    request.setKeyAndVersions(toDelete.toArray(new KeyAndVersion[toDelete.size()]));
    DeleteObjectsResult result = obsClient.deleteObjects(request);
    System.out.println("deleteObjects successfully");
    System.out.println("getDeletedObjectResults:" + result.getDeletedObjectResults());
    System.out.println("getErrorResults:" + result.getErrorResults());
} catch (ObsException e) {
    System.out.println("deleteObjects failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteObjects failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting Objects](#)
- [\(GitHub\) Sample Code for Object Deletion](#)
- [OBS Error Codes](#)

# 13 Lifecycle Management (SDK for Java)

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## 13.1 Overview (SDK for Java)

OBS allows you to set lifecycle rules for buckets to automatically transition the storage class of an object or delete expired objects, to effectively use storage features and optimize the storage space. You can set multiple lifecycle rules based on the prefix. A lifecycle rule must contain:

- Rule ID, which uniquely identifies the rule
- Prefix of objects that are under the control of this rule
- Transition policy of an object of the latest version, which can be specified in either mode:
  - a. How many days after the object is created
  - b. Transition date
- Expiration time of an object of the latest version, which can be specified in either mode:
  - a. How many days after the object is created
  - b. Expiration date
- Transition policy of a noncurrent object version, which can be specified in the following mode:
  - How many days after an object version becomes a noncurrent one
- Expiration time of a noncurrent object version, which can be specified in the following mode:
  - How many days after the object becomes a noncurrent object version
- Identifier specifying whether the setting is effective

For more information, see [Lifecycle Management](#).

## 13.2 Setting Lifecycle Rules (SDK for Java)

### Function

This API configures lifecycle rules for a bucket to periodically delete objects in the bucket or transition objects between storage classes. For more information, see [Lifecycle Management](#).

1. An object will be automatically deleted by the OBS server once it expires.
2. The time set in the transition policy of an object must be earlier than its expiration time, and the time set in the transition policy of a noncurrent object version must be earlier than its expiration time.
3. The configured expiration time and transition policy for a noncurrent object version can only take effect when versioning is enabled or suspended for the bucket where that object version is stored.

#### NOTE

- The minimum storage duration is 30 days for Infrequent Access storage, and 90 days for Archive storage. After an object is transitioned to the Archive storage class, if it stays in this storage class for less than 90 days, you still need to pay for a full 90 days.

### Restrictions

- There is no limit on the number of lifecycle rules in a bucket, but the total size of XML descriptions about all lifecycle rules in a bucket cannot exceed 20 KB.
- A maximum of 20 lifecycle rules can be configured for a parallel file system.
- To configure a lifecycle rule for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutLifecycleConfiguration** in IAM or **PutLifecycleConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- Expired objects will be permanently deleted and cannot be recovered.
- Multi-AZ redundancy is not available for Archive storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the Archive storage class based on a lifecycle rule.

### Method

obsClient.setBucketLifecycle(final [SetBucketLifecycleRequest request](#))

## Request Parameters

**Table 13-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
deleteRequest	<a href="#">SetBucketLifecycleRequest</a>	Yes	<b>Explanation:</b> Request parameters for setting the lifecycle rule. For details, see <a href="#">Table 13-2</a> .

**Table 13-2** SetBucketLifecycleRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
lifecycleConfiguration	<a href="#">LifecycleConfiguration</a>	Yes	<b>Explanation:</b> Lifecycle rules for the bucket. For details, see <a href="#">Table 13-3</a> .

**Table 13-3** LifecycleConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
rules	List< <a href="#">Rule</a> >	No	<b>Explanation:</b> List of lifecycle rules. For details, see <a href="#">Table 13-4</a> .

**Table 13-4** Rule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	<b>Explanation:</b> Lifecycle rule ID. <b>Value range:</b> The value must contain 1 to 255 characters. <b>Default value:</b> None



Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	Yes	<p><b>Explanation:</b> Object name prefix. It identifies the objects the rule applies to. You can leave this parameter blank to apply the rule to all objects in the bucket.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you set <b>prefix</b> to <b>ExampleObject.jpg</b>, the rule applies to object <b>ExampleObject.jpg</b> only. If you set <b>prefix</b> to <b>logs/</b>, the rule applies to the three objects with name starting with <b>logs/</b>. If you leave <b>prefix</b> blank, the rule applies to all objects in the bucket.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
enabled	boolean	Yes	<p><b>Explanation:</b> Whether to enable the rule.</p> <p><b>Value range:</b> <b>true:</b> The rule is enabled. <b>false:</b> The rule is disabled.</p> <p><b>Default value:</b> None</p>
expiration	<b>Expiration</b>	No	<p><b>Explanation:</b> Expiration time of an object. For details, see <a href="#">Table 13-5</a>.</p> <p><b>Default value:</b> None</p>
noncurrentVersionExpiration	<b>NoncurrentVersionExpiration</b>	No	<p><b>Explanation:</b> Expiration time of noncurrent object versions. For details, see <a href="#">Table 13-6</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• This parameter is only available for noncurrent object versions.</li> <li>• Versioning must be enabled (or suspended after being enabled) for the bucket.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
transitions	List< <a href="#">Transition</a> >	No	<p><b>Explanation:</b> Policies for storage class transition, including transition time and the storage class after transition. For details, see <a href="#">Table 13-7</a>.</p> <p><b>Restrictions:</b> This parameter is only available for the current object version.</p> <p><b>Default value:</b> None</p>
noncurrentVersionTransitions	List< <a href="#">NoncurrentVersionTransition</a> >	No	<p><b>Explanation:</b> Policies for storage class transition of noncurrent versions, including transition time and the storage class after transition. For details, see <a href="#">Table 13-9</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• This parameter is only available for noncurrent object versions.</li> <li>• Versioning must be enabled (or suspended after being enabled) for the bucket.</li> </ul> <p><b>Default value:</b> None</p>

**Table 13-5** Expiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if <b>date</b> is not configured.	<p><b>Explanation:</b> Number of days (since the last update was made to the object) after which the lifecycle rule takes effect (the object will be deleted).</p> <p><b>Restrictions:</b> This parameter is only available for the current object version.</p> <p><b>Value range:</b> A positive integer, in days.</p> <p><b>Default value:</b> None</p>
date	Date	This parameter is mandatory if <b>days</b> is not configured.	<p><b>Explanation:</b> OBS deletes objects that were modified before the specified date.</p> <p><b>Default value:</b> None</p>

**Table 13-6** NoncurrentVersionExpiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	Yes	<p><b>Explanation:</b> Number of days an object is noncurrent before it expires.</p> <p><b>Restrictions:</b> This parameter is only available for noncurrent object versions.</p> <p><b>Value range:</b> A positive integer, in days.</p> <p><b>Default value:</b> None</p>

**Table 13-7** Transition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if <b>date</b> is not configured.	<b>Explanation:</b> Number of days after its creation when the object is transitioned. <b>Restrictions:</b> This parameter is only available for the current object version. <b>Value range:</b> A positive integer, in days. <b>Default value:</b> None
date	Date	This parameter is mandatory if <b>days</b> is not configured.	<b>Explanation:</b> Date when the object will be transitioned. <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
storageClass	<a href="#">StorageClassEnum</a>	Yes	<p><b>Explanation:</b> Storage class the object is transitioned to.</p> <p><b>Restrictions:</b> Restrictions on storage class transitions:</p> <ul style="list-style-type: none"> <li>• Only transitions from the Standard storage class to the Infrequent Access storage class are supported. To transition objects from Infrequent Access to Standard, you must manually do it.</li> <li>• Only transitions from the Standard or Infrequent Access storage class to the Archive storage class are supported. To transition objects from Archive to Standard or Infrequent Access, you must restore the archived objects first and then manually transition their storage classes.</li> <li>• Multi-AZ redundancy does not support Archive storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the Archive storage class based on a lifecycle rule.</li> </ul> <p><b>Value range:</b> See <a href="#">Table 13-8</a>.</p> <p><b>Default value:</b> None</p>

**Table 13-8** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 13-9** NoncurrentVersionTransition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if <b>date</b> is not configured.	<p><b>Explanation:</b> Number of days after its creation when the object is transitioned.</p> <p><b>Restrictions:</b> This parameter is only available for noncurrent object versions.</p> <p><b>Value range:</b> A positive integer, in days.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	Yes	<p><b>Explanation:</b> Storage class the object is transitioned to.</p> <p><b>Restrictions:</b> Restrictions on storage class transitions:</p> <ul style="list-style-type: none"> <li>• Only transitions from the Standard storage class to the Infrequent Access storage class are supported. To transition objects from Infrequent Access to Standard, you must manually do it.</li> <li>• Only transitions from the Standard or Infrequent Access storage class to the Archive storage class are supported. To transition objects from Archive to Standard or Infrequent Access, you must restore the archived objects first and then manually transition their storage classes.</li> <li>• Multi-AZ redundancy does not support Archive storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the Archive storage class based on a lifecycle rule.</li> </ul> <p><b>Value range:</b> See <a href="#">Table 13-8</a>.</p> <p><b>Default value:</b> None</p>

 NOTE

**Transitions, Expiration, NoncurrentVersionTransitions, AbortIncompleteMultipartUpload, and NoncurrentVersionExpiration** must not be all left blank.

## Responses

**Table 13-10** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Example: Setting an Object Transition Policy

This example configures a transition policy for latest and historical object versions in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.LifecycleConfiguration;
import com.obs.services.model.StorageClassEnum;
public class SetBucketLifecycle001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
```



```
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    //Set an object transition policy.
    LifecycleConfiguration config = new LifecycleConfiguration();
    LifecycleConfiguration.Rule rule = config.new Rule();
    rule.setEnabled(true);
    rule.setId("rule1");
    rule.setPrefix("prefix");
    LifecycleConfiguration.Transition transition = config.new Transition();
    // Specify that objects whose names contain the specified prefix will be transitioned 30 days after
creation.
    transition.setDays(30);
    // Specify the storage class that the object will be transitioned to.
    transition.setObjectStorageClass(StorageClassEnum.WARM);
    // Specify when the objects whose names contain the specified prefix will be transitioned.
    // transition.setDate(new SimpleDateFormat("yyyy-MM-dd").parse("2018-10-31"));
    rule.getTransitions().add(transition);
    LifecycleConfiguration.NoncurrentVersionTransition noncurrentVersionTransition =
        config.new NoncurrentVersionTransition();
    // Specify that objects whose names contain the specified prefix will be transitioned 30 days after
being historical versions.
    noncurrentVersionTransition.setDays(30);
    // Specify the storage class of the historical object version after transition.
    noncurrentVersionTransition.setObjectStorageClass(StorageClassEnum.COLD);
    rule.getNoncurrentVersionTransitions().add(noncurrentVersionTransition);
    // Set the expiration time of fragments.
    LifecycleConfiguration.AbortIncompleteMultipartUpload abortIncompleteMultipartUpload =
config.new AbortIncompleteMultipartUpload();
    abortIncompleteMultipartUpload.setDaysAfterInitiation(7);
    rule.setAbortIncompleteMultipartUpload(abortIncompleteMultipartUpload);
    config.addRule(rule);
    obsClient.setBucketLifecycle("examplebucket", config);
    System.out.println("setBucketLifecycle successfully");
} catch (ObsException e) {
    System.out.println("setBucketLifecycle failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketLifecycle failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Setting the Object Expiration Time

This example configures the expiration time of latest and historical object versions in bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.LifecycleConfiguration;
public class SetBucketLifecycle002 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Set the object expiration time.
            LifecycleConfiguration config = new LifecycleConfiguration();
            LifecycleConfiguration.Rule rule = config.new Rule();
            rule.setEnabled(true);
            rule.setId("rule1");
            rule.setPrefix("prefix");
            LifecycleConfiguration.Expiration expiration = config.new Expiration();
            // Specify that objects whose names contain the specified prefix will expire 60 days after creation.
            expiration.setDays(60);
            // Specify when the objects whose names contain the specified prefix will expire.
            // expiration.setDate(new SimpleDateFormat("yyyy-MM-dd").parse("2018-12-31"));
            rule.setExpiration(expiration);
            LifecycleConfiguration.NoncurrentVersionExpiration noncurrentVersionExpiration =
                config.new NoncurrentVersionExpiration();
            // Specify that objects whose names contain the specified prefix will expire after changing into
historical versions for 60 days.
            noncurrentVersionExpiration.setDays(60);
            rule.setNoncurrentVersionExpiration(noncurrentVersionExpiration);
            config.addRule(rule);
            obsClient.setBucketLifecycle("examplebucket", config);
            System.out.println("setBucketLifecycle successfully");
        } catch (ObsException e) {
            System.out.println("setBucketLifecycle failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("setBucketLifecycle failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Configuring Bucket Lifecycle Rules](#)
- [\(GitHub\) Sample Code for Configuring a Bucket Lifecycle Rule](#)
- [OBS Error Codes](#)
- [Lifecycle Management FAQ](#)

## 13.3 Obtaining Lifecycle Rules (SDK for Java)

### Function

You can configure lifecycle rules to periodically delete objects or transition objects between storage classes. For more information, see [Lifecycle Management](#).

This API returns the lifecycle rules of a bucket.

### Restrictions

- To obtain the lifecycle configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetLifecycleConfiguration** in IAM or **GetLifecycleConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.getBucketLifecycle(final [BaseBucketRequest request](#))

### Request Parameters

Table 13-11 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters related to basic bucket information. For details, see <a href="#">Table 13-12</a> .

**Table 13-12** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 13-13** LifecycleConfiguration

Parameter	Type	Description
rules	List< <a href="#">Rule</a> >	<b>Explanation:</b> List of lifecycle rules. For details, see <a href="#">Table 13-14</a> .
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

**Table 13-14** Rule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	<b>Explanation:</b> Lifecycle rule ID. <b>Value range:</b> The value must contain 1 to 255 characters. <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	Yes	<p><b>Explanation:</b> Object name prefix. It identifies the objects the rule applies to. You can leave this parameter blank to apply the rule to all objects in the bucket.</p> <p>Assume that you have the following objects: <b>logs/day1</b>, <b>logs/day2</b>, <b>logs/day3</b>, and <b>ExampleObject.jpg</b>. If you set <b>prefix</b> to <b>ExampleObject.jpg</b>, the rule applies to object <b>ExampleObject.jpg</b> only. If you set <b>prefix</b> to <b>logs/</b>, the rule applies to the three objects with name starting with <b>logs/</b>. If you leave <b>prefix</b> blank, the rule applies to all objects in the bucket.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
enabled	boolean	Yes	<p><b>Explanation:</b> Whether the rule is enabled.</p> <p><b>Value range:</b> <b>true:</b> The rule is enabled. <b>false:</b> The rule is disabled.</p> <p><b>Default value:</b> None</p>
expiration	<a href="#">Expiration</a>	No	<p><b>Explanation:</b> Expiration time of an object. For details, see <a href="#">Table 13-15</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
noncurrentVersionExpiration	<a href="#">NoncurrentVersionExpiration</a>	No	<p><b>Explanation:</b> Expiration time of noncurrent object versions. For details, see <a href="#">Table 13-16</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>This parameter is only available for noncurrent object versions.</li> <li>Versioning must be enabled (or suspended after being enabled) for the bucket.</li> </ul> <p><b>Default value:</b> None</p>
transitions	List< <a href="#">Transition</a> >	No	<p><b>Explanation:</b> Policies for storage class transition, including transition time and the storage class after transition. For details, see <a href="#">Table 13-17</a>.</p> <p><b>Restrictions:</b> This parameter is only available for the current object version.</p> <p><b>Default value:</b> None</p>
noncurrentVersionTransitions	List< <a href="#">NoncurrentVersionTransition</a> >	No	<p><b>Explanation:</b> Policies for storage class transition of noncurrent versions, including transition time and the storage class after transition. For details, see <a href="#">Table 13-19</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>This parameter is only available for noncurrent object versions.</li> <li>Versioning must be enabled (or suspended after being enabled) for the bucket.</li> </ul> <p><b>Default value:</b> None</p>

**Table 13-15** Expiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if <b>date</b> is not configured.	<p><b>Explanation:</b> Number of days (since the last update was made to the object) after which the lifecycle rule takes effect (the object will be deleted).</p> <p><b>Restrictions:</b> This parameter is only available for the current object version.</p> <p><b>Value range:</b> A positive integer, in days.</p> <p><b>Default value:</b> None</p>
date	Date	This parameter is mandatory if <b>days</b> is not configured.	<p><b>Explanation:</b> OBS deletes objects that were modified before the specified date.</p> <p><b>Default value:</b> None</p>

**Table 13-16** NoncurrentVersionExpiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	Yes	<p><b>Explanation:</b> Number of days an object is noncurrent before it expires.</p> <p><b>Restrictions:</b> This parameter is only available for noncurrent object versions.</p> <p><b>Value range:</b> A positive integer, in days.</p> <p><b>Default value:</b> None</p>



**Table 13-17** Transition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if <b>date</b> is not configured.	<b>Explanation:</b> Number of days after its creation when the object is transitioned. <b>Restrictions:</b> This parameter is only available for the current object version. <b>Value range:</b> A positive integer, in days. <b>Default value:</b> None
date	Date	This parameter is mandatory if <b>days</b> is not configured.	<b>Explanation:</b> Date when the object will be transitioned. <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
storageClass	<a href="#">StorageClassEnum</a>	Yes	<p><b>Explanation:</b> Storage class the object is transitioned to.</p> <p><b>Restrictions:</b> Restrictions on storage class transitions:</p> <ul style="list-style-type: none"> <li>• Only transitions from the Standard storage class to the Infrequent Access storage class are supported. To transition objects from Infrequent Access to Standard, you must manually do it.</li> <li>• Only transitions from the Standard or Infrequent Access storage class to the Archive storage class are supported. To transition objects from Archive to Standard or Infrequent Access, you must restore the archived objects first and then manually transition their storage classes.</li> <li>• Multi-AZ redundancy does not support Archive storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the Archive storage class based on a lifecycle rule.</li> </ul> <p><b>Value range:</b> See <a href="#">Table 13-18</a>.</p> <p><b>Default value:</b> None</p>

**Table 13-18** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 13-19** NoncurrentVersionTransition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if <b>date</b> is not configured.	<p><b>Explanation:</b> Number of days after its creation when the object is transitioned.</p> <p><b>Restrictions:</b> This parameter is only available for noncurrent object versions.</p> <p><b>Value range:</b> A positive integer, in days.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">Storage Class Enum</a>	Yes	<p><b>Explanation:</b> Storage class the object is transitioned to.</p> <p><b>Restrictions:</b> Restrictions on storage class transitions:</p> <ul style="list-style-type: none"> <li>• Only transitions from the Standard storage class to the Infrequent Access storage class are supported. To transition objects from Infrequent Access to Standard, you must manually do it.</li> <li>• Only transitions from the Standard or Infrequent Access storage class to the Archive storage class are supported. To transition objects from Archive to Standard or Infrequent Access, you must restore the archived objects first and then manually transition their storage classes.</li> <li>• Multi-AZ redundancy does not support Archive storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the Archive storage class based on a lifecycle rule.</li> </ul> <p><b>Value range:</b> See <a href="#">Table 13-18</a>.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example returns the lifecycle configuration of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.LifecycleConfiguration;
public class GetBucketLifecycle001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // View the lifecycle rules
            LifecycleConfiguration config = obsClient.getBucketLifecycle("examplebucket");
            System.out.println("getBucketLifecycle successfully");
            for (LifecycleConfiguration.Rule rule : config.getRules()) {
                System.out.println(rule.getId());
                System.out.println(rule.getPrefix());
                for (LifecycleConfiguration.Transition transition : rule.getTransitions()) {
                    System.out.println(transition.getDays());
                    System.out.println(transition.getStorageClass());
                }
                System.out.println(rule.getExpiration() != null ? rule.getExpiration().getDays() : "");
                for (LifecycleConfiguration.NoncurrentVersionTransition noncurrentVersionTransition :
                    rule.getNoncurrentVersionTransitions()) {
                    System.out.println(noncurrentVersionTransition.getDays());
                    System.out.println(noncurrentVersionTransition.getStorageClass());
                }
                System.out.println(
                    rule.getNoncurrentVersionExpiration() != null
                        ? rule.getNoncurrentVersionExpiration().getDays()
                        : "");
            }
        } catch (ObsException e) {
            System.out.println("getBucketLifecycle failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("getBucketLifecycle failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Obtaining Bucket Lifecycle Configuration](#)
- [\(GitHub\) Sample Code for Obtaining the Bucket Lifecycle Configuration](#)
- [OBS Error Codes](#)
- [Lifecycle Management FAQ](#)

## 13.4 Deleting Lifecycle Rules (SDK for Java)

### Function

You can configure lifecycle rules to periodically delete objects or transition objects between storage classes. For more information, see [Lifecycle Management](#).

This API deletes the lifecycle configuration of a bucket.

### Restrictions

- To delete the lifecycle configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutLifecycleConfiguration** in IAM or **PutLifecycleConfiguration** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).
- You cannot use this API to delete a specified lifecycle rule. When you call this API, all lifecycle rules in the bucket are deleted.

### Method

obsClient.deleteBucketLifecycle(final [BaseBucketRequest request](#))

### Request Parameters

**Table 13-20** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters related to basic bucket information. For details, see <a href="#">Table 13-21</a> .

**Table 13-21** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 13-22** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example deletes the lifecycle configurations of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteBucketLifecycle001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
```

```
try {
    // Delete the lifecycle configurations.
    obsClient.deleteBucketLifecycle("examplebucket");
    System.out.println("deleteBucketLifecycle successfully");
} catch (ObsException e) {
    System.out.println("deleteBucketLifecycle failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteBucketLifecycle failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting Lifecycle Rules](#)
- [\(GitHub\) Sample Code for Deleting the Bucket Lifecycle Configuration](#)
- [OBS Error Codes](#)
- [Lifecycle Management FAQ](#)



# 14 Cross-Origin Resource Sharing (SDK for Java)

---

## 14.1 Overview (SDK for Java)

Cross-origin resource sharing (CORS) allows web application programs to access resources in other domains. OBS provides developers with APIs for facilitating cross-origin resource access.

For more information, see [CORS](#).

## 14.2 Configuring a CORS Rule (SDK for Java)

### Function

Cross-origin resource sharing (CORS) is a browser-standard mechanism defined by the World Wide Web Consortium (W3C). It allows a web client in one origin to interact with resources in another. For general web page requests, website scripts and contents in one origin cannot interact with those in another due to Same Origin Policies (SOPs). OBS supports CORS, allowing the resources in OBS to be requested across origins.

You can call **ObsClient.setBucketCors** to set CORS rules for a bucket. The configured CORS rules follow the principle of new ones overwriting old ones.

### Restrictions

- To configure CORS for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketCORS** in IAM or **PutBucketCORS** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsclient.setBucketCors(final [SetBucketCorsRequest request](#))

## Request Parameters

**Table 14-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetBucketCorsRequest</a>	Yes	Request parameters for setting a CORS rule. For details, see <a href="#">Table 14-2</a> .

**Table 14-2** SetBucketCorsRequest

Parameter	Type	Man dato ry (Yes /No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
bucketCors	<b>BucketCors</b>	Yes	<p><b>Explanation:</b> List of CORS rules of a bucket. For details, see <a href="#">Table 14-3</a>.</p>

**Table 14-3** BucketCors

Parameter	Type	Mandatory (Yes/No)	Description
rules	List<BucketCorsRule>	Yes	<b>Explanation:</b> List of CORS rules of a bucket. For details, see <a href="#">Table 14-4</a> .

**Table 14-4** BucketCorsRule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	<b>Explanation:</b> CORS rule ID. <b>Value range:</b> The value must contain 1 to 255 characters. <b>Default value:</b> None
allowed Method	List<String>	Yes	<b>Explanation:</b> The allowed HTTP methods for a cross-origin request, indicating the operation types for buckets and objects. <b>Value range:</b> The following HTTP methods are supported: <ul style="list-style-type: none"> <li>● GET</li> <li>● PUT</li> <li>● HEAD</li> <li>● POST</li> <li>● DELETE</li> </ul> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
allowedOrigin	List<String>	Yes	<p><b>Explanation:</b> The origin from which the requests can access the bucket.</p> <p><b>Restrictions:</b> Domain name of the origin. Each origin can contain only one wildcard character (*), for example, <b>https://*.vbs.example.com</b>.</p> <p><b>Default value:</b> None</p>
allowedHeader	List<String>	No	<p><b>Explanation:</b> The allowed cross-origin request headers. Only CORS requests matching the allowed headers are valid.</p> <p><b>Restrictions:</b> Each header can contain only one wildcard character (*). Spaces, ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>
maxAgeSeconds	int	No	<p><b>Explanation:</b> Duration your client can cache the response for a cross-origin request.</p> <p><b>Restrictions:</b> Each bucket CORS rule can contain only one <b>maxAgeSeconds</b>.</p> <p><b>Value range:</b> An integer greater than or equal to 0, in seconds.</p> <p><b>Default value:</b> 100</p>

Parameter	Type	Mandatory (Yes/No)	Description
exposeHeader	List<String>	No	<p><b>Explanation:</b> The CORS-allowed additional headers in the response. These headers provide additional information to clients. By default, your browser can only access headers <b>Content-Length</b> and <b>Content-Type</b>. If your browser needs to access other headers, add them to the list of the allowed additional headers.</p> <p><b>Restrictions:</b> Spaces, wildcard characters (*), ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 14-5** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example configures CORS rules for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketCors;
import com.obs.services.model.BucketCorsRule;
import com.obs.services.model.DeleteObjectsRequest;
import com.obs.services.model.DeleteObjectsResult;
import com.obs.services.model.KeyAndVersion;
import java.util.ArrayList;
import java.util.List;
public class SetBucketCors001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            //Configure CORS rules.
            BucketCors cors = new BucketCors();
            List<BucketCorsRule> rules = new ArrayList<BucketCorsRule>();
            BucketCorsRule rule = new BucketCorsRule();
            ArrayList<String> allowedOrigin = new ArrayList<String>();
            // Specify the origin of the cross-origin request.
            allowedOrigin.add( "http://www.a.com");
            allowedOrigin.add( "http://www.b.com");
            rule.setAllowedOrigin(allowedOrigin);
            ArrayList<String> allowedMethod = new ArrayList<String>();
            // Specify the request method, which can be GET, PUT, DELETE, POST, or HEAD.
            allowedMethod.add("GET");
            allowedMethod.add("HEAD");
            allowedMethod.add("PUT");
            rule.setAllowedMethod(allowedMethod);
            ArrayList<String> allowedHeader = new ArrayList<String>();
            // Specify whether headers specified in Access-Control-Request-Headers in the OPTIONS request
            // can be used.
            allowedHeader.add("x-obs-header");
            rule.setAllowedHeader(allowedHeader);
            ArrayList<String> exposeHeader = new ArrayList<String>();
            // Specify response headers that users can access using application programs.
            exposeHeader.add("x-obs-expose-header");
            rule.setExposeHeader(exposeHeader);
            // Specify the browser's cache time of the returned results of OPTIONS requests for specific
            // resources, in seconds.
            rule.setMaxAgeSecond(10);
            rules.add(rule);
            cors.setRules(rules);
            obsClient.setBucketCors("examplebucket", cors);
            System.out.println("setBucketCors successfully");
        }
    }
}
```

```
} catch (ObsException e) {
    System.out.println("setBucketCors failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketCors failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Configuring Bucket CORS](#)
- [\(GitHub\) Sample Code for Configuring CORS for a Bucket](#)
- [OBS Error Codes](#)

## 14.3 Obtaining a CORS Rule (SDK for Java)

### Function

CORS is a browser-standard mechanism defined by the W3C. It allows a web client in one origin to interact with resources in another. For general web page requests, website scripts and contents in one origin cannot interact with those in another due to SOPs. OBS supports CORS, allowing the resources in OBS to be requested across origins.

This API returns the CORS configuration of a bucket.

### Restrictions

- To obtain the CORS configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketCORS** in IAM or **GetBucketCORS** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsclient.getBucketCors(final [BaseBucketRequest request](#))



## Request Parameters

**Table 14-6** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters for obtaining a CORS rule. For details, see <a href="#">Table 14-7</a> .

**Table 14-7** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 14-8** BucketCors

Parameter	Type	Mandatory (Yes/No)	Description
rules	List<BucketCorsRule>	Yes	<b>Explanation:</b> List of CORS rules of a bucket. For details, see <a href="#">Table 14-9</a> .

**Table 14-9** BucketCorsRule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	<b>Explanation:</b> CORS rule ID. <b>Value range:</b> The value must contain 1 to 255 characters. <b>Default value:</b> None
allowed Method	List<String>	Yes	<b>Explanation:</b> The allowed HTTP methods for a cross-origin request, indicating the operation types for buckets and objects. <b>Value range:</b> The following HTTP methods are supported: <ul style="list-style-type: none"> <li>• GET</li> <li>• PUT</li> <li>• HEAD</li> <li>• POST</li> <li>• DELETE</li> </ul> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
allowedOrigin	List<String>	Yes	<p><b>Explanation:</b> The origin from which the requests can access the bucket.</p> <p><b>Restrictions:</b> Domain name of the origin. Each origin can contain only one wildcard character (*), for example, <a href="https://*.vbs.example.com">https://*.vbs.example.com</a>.</p> <p><b>Default value:</b> None</p>
allowedHeader	List<String>	No	<p><b>Explanation:</b> The allowed cross-origin request headers. Only CORS requests matching the allowed headers are valid.</p> <p><b>Restrictions:</b> Each header can contain only one wildcard character (*). Spaces, ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>
maxAgeSeconds	int	No	<p><b>Explanation:</b> Duration your client can cache the response for a cross-origin request.</p> <p><b>Restrictions:</b> Each bucket CORS rule can contain only one <b>maxAgeSeconds</b>.</p> <p><b>Value range:</b> An integer greater than or equal to 0, in seconds.</p> <p><b>Default value:</b> 100</p>

Parameter	Type	Mandatory (Yes/No)	Description
exposeHeader	List<String>	No	<p><b>Explanation:</b> The CORS-allowed additional headers in the response. These headers provide additional information to clients. By default, your browser can only access headers <b>Content-Length</b> and <b>Content-Type</b>. If your browser needs to access other headers, add them to the list of the allowed additional headers.</p> <p><b>Restrictions:</b> Spaces, wildcard characters (*), ampersands (&amp;), colons (:), and less-than signs (&lt;) are not allowed.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example returns the CORS configuration of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketCors;
import com.obs.services.model.BucketCorsRule;
public class GetBucketCors001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Obtain the CORS rules.
            BucketCors cors = obsClient.getBucketCors("examplebucket");
            for(BucketCorsRule rule : cors.getRules()){
                System.out.println("Id:" + rule.getId());
                System.out.println("MaxAgeSecond:" + rule.getMaxAgeSecond());
                System.out.println("AllowedHeader:" + rule.getAllowedHeader());
                System.out.println("AllowedOrigin:" + rule.getAllowedOrigin());
            }
        }
    }
}
```

```
        System.out.println("AllowedMethod:" + rule.getAllowedMethod());
        System.out.println("ExposeHeader:" + rule.getExposeHeader());
    }
    System.out.println("getBucketCors successfully");
} catch (ObsException e) {
    System.out.println("getBucketCors failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getBucketCors failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining the CORS Configuration of a Bucket](#)
- [\(GitHub\) Sample Code for Obtaining a CORS Rule](#)
- [OBS Error Codes](#)

## 14.4 Deleting a CORS Rule (SDK for Java)

### Function

CORS is a browser-standard mechanism defined by the W3C. It allows a web client in one origin to interact with resources in another. For general web page requests, website scripts and contents in one origin cannot interact with those in another due to SOPs. OBS supports CORS, allowing the resources in OBS to be requested across origins.

This API deletes the CORS rules of a bucket.

### Restrictions

- To delete the CORS configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketCORS** in IAM or **PutBucketCORS** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsclient.deleteBucketCors(final [BaseBucketRequest request](#))

## Request Parameters

**Table 14-10** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters for deleting a CORS rule. For details, see <a href="#">Table 14-11</a> .

**Table 14-11** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.)</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>



## Responses

**Table 14-12** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Examples

This example deletes CORS rules of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteBucketCors001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
```

```
try {
    // Delete CORS rules.
    obsClient.deleteBucketCors("examplebucket");
    System.out.println("deleteBucketCors successfully");
} catch (ObsException e) {
    System.out.println("deleteBucketCors failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMassage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteBucketCors failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting the CORS Configuration of a Bucket](#)
- [\(GitHub\) Sample Code for Deleting a CORS Rule](#)
- [OBS Error Codes](#)

# 15 Logging (SDK for Java)

---

## 15.1 Overview (SDK for Java)

OBS allows you to configure access logging for buckets. After the configuration, access to buckets will be recorded in the format of logs. These logs will be saved in specific buckets in OBS.

For more information, see [Logging](#).

## 15.2 Configuring Logging for a Bucket (SDK for Java)

### Function

This API enables logging for a bucket (source) and configures another bucket (target) to store the log files. When a bucket is created, logging is not enabled by default. You can call this API to enable logging for the bucket. With logging enabled, a log message is generated for each operation on the bucket. Multiple log messages are packed into a 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. You can also specify access permissions and name prefixes for log files.

### Restrictions

- The source and target buckets must be in the same region.
- A bucket in the Infrequent Access or Archive storage class cannot be used as a target bucket.
- OBS creates log files and uploads them to the bucket. Before enabling logging for a bucket, you need to create an IAM agency to delegate OBS to upload log files to the specified bucket. For details about how to create an agency, see [Cloud Service Delegation](#).
- To configure logging for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketLogging** in IAM or

**PutBucketLogging** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

## Method

obsClient.setBucketLogging(final [SetBucketLoggingRequest](#) request)

## Request Parameters

**Table 15-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetBucketLoggingRequest</a>	Yes	<b>Explanation:</b> Request parameters for configuring logging for a bucket. For details, see <a href="#">Table 15-2</a> .

**Table 15-2** SetBucketLoggingRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Name of the source bucket.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
loggingConfiguration	<a href="#">BucketLoggingConfiguration</a>	Yes	<p><b>Explanation:</b> Bucket logging configurations. For details, see <a href="#">Table 15-3</a>.</p>

**Table 15-3** BucketLoggingConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
agency	String	Yes if you configure bucket logging	<p><b>Explanation:</b>                      Name of the IAM agency created by the owner of the target bucket for OBS.                      You can select an existing IAM agency or create one. For details about how to create an agency, see <a href="#">Creating an IAM Agency</a>.</p> <p><b>Restrictions:</b>                      By default, the IAM agency only requires the <b>PutObject</b> permission to upload logs to the target bucket. If default encryption is enabled for the target bucket, the agency also requires the <b>KMS Administrator</b> permission in the region where the target bucket is located.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
targetBucketName	String	No	<p><b>Explanation:</b> Name of the bucket for storing log files.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• This bucket must be in the same region as the bucket with logging enabled.</li> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in</li> </ul>

Parameter	Type	Mandatory (Yes/No)	Description
			<p>the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</p> <p><b>Default value:</b> None</p>
logfilePrefix	String	No	<p><b>Explanation:</b> Name prefix for log files stored in the target bucket.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
targetGrantsList	List< <a href="#">GrantAndPermission</a> >	No	<p><b>Explanation:</b> Permission information list of grantees, which defines grantees and their permissions for log files. For details, see <a href="#">Table 15-4</a>.</p>

**Table 15-4** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<p><b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 15-5</a>.</p>



Parameter	Type	Mandatory (Yes/No)	Description
permission	<a href="#">Permission</a>	Yes	<p><b>Explanation:</b> Permissions to grant.</p> <p><b>Value range:</b> See <a href="#">Table 15-8</a>.</p> <p><b>Default value:</b> None</p>
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 15-5** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 15-6</a>.</p>
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 15-7</a>.</p> <p><b>Default value:</b> None</p>

**Table 15-6** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 15-7** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 15-8** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>

Constant	Default Value	Description
PERMISSION_WRITE	WRITE	Write permission. A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket. This permission is not available for objects.
PERMISSION_READ_ACP	READ_ACP	Permission to read an ACL. A grantee with this permission can obtain the ACL of a bucket or object. A bucket or object owner has this permission for their bucket or object by default.
PERMISSION_WRITE_ACP	WRITE_ACP	Permission to modify an ACL. A grantee with this permission can update the ACL of a bucket or object. A bucket or object owner has this permission for their bucket or object by default. This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.
PERMISSION_FULL_CONTROL	FULL_CONTROL	Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL. A grantee with this permission for a bucket has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the bucket. A grantee with this permission for an object has <b>READ</b> , <b>WRITE</b> , <b>READ_ACP</b> , and <b>WRITE_ACP</b> permissions for the object.

## Responses

**Table 15-9** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

### Code Example: Enabling Bucket Logging

This example configures logging for bucket **examplebucket**, with **your agency** as the agency, **targetprefix** as the prefix for generated log files, and **targetbucketname** as the bucket for storing log files.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketLoggingConfiguration;
public class SetBucketLogging001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
```

```
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Enable bucket logging.
    BucketLoggingConfiguration config = new BucketLoggingConfiguration();
    // Set an agency. You need to create one on IAM.
    config.setAgency("your agency");
    config.setTargetBucketName("targetbucketname");
    config.setLogfilePrefix("targetprefix");
    obsClient.setBucketLogging("examplebucket", config);
    System.out.println("setBucketLogging successfully");
} catch (ObsException e) {
    System.out.println("setBucketLogging failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketLogging failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Granting the Read Permission on a Log Object

This example configures logging for bucket **examplebucket**, with **your agency** as the agency, **targetprefix** as the prefix for generated log files, and **targetbucketname** as the bucket for storing log files, and then grants all users the read permission for the logs.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketLoggingConfiguration;
import com.obs.services.model.GrantAndPermission;
import com.obs.services.model.GroupGrantee;
import com.obs.services.model.Permission;
public class SetBucketLogging002
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
```

```
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Configure access to logs.
    String targetBucket = "targetbucketname";
    // Configure logging for the bucket.
    BucketLoggingConfiguration config = new BucketLoggingConfiguration();
    // Set an agency. You need to create one on IAM.
    config.setAgency("your agency");
    config.setTargetBucketName(targetBucket);
    config.setLogfilePrefix("prefix");
    // Grant all users the READ permission for the logs.
    GrantAndPermission grant1 = new GrantAndPermission(GroupGrantee.ALL_USERS,
Permission.PERMISSION_READ);
    config.setTargetGrants(new GrantAndPermission[]{grant1});
    obsClient.setBucketLogging("examplebucket", config);
    System.out.println("setBucketLogging successfully");
} catch (ObsException e) {
    System.out.println("setBucketLogging failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketLogging failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Disabling Bucket Logging

This example disables the logging for bucket **examplebucket** by clearing the logging configurations of the bucket using **ObsClient.setBucketLogging**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketLoggingConfiguration;
public class SetBucketLogging003
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
    }
}
```

```
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Leave the logging configurations in blank.
    obsClient.setBucketLogging("examplebucket", new BucketLoggingConfiguration());
    System.out.println("setBucketLogging successfully");
} catch (ObsException e) {
    System.out.println("setBucketLogging failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketLogging failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Configuring Logging for a Bucket](#)
- [\(GitHub\) Sample Code for Bucket Logging Configuration](#)
- [OBS Error Codes](#)

## 15.3 Obtaining the Logging Configuration of a Bucket (SDK for Java)

### Function

This API returns the logging configuration of a bucket.

### Restrictions

- To obtain the logging configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketLogging** in IAM or **GetBucketLogging** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.getBucketLogging(final [BaseBucketRequest request](#))

## Request Parameters

**Table 15-10** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters for obtaining the logging configurations of a bucket. For details, see <a href="#">Table 15-11</a> .



**Table 15-11** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 15-12** BucketLoggingConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
agency	String	Yes if you configure bucket logging	<p><b>Explanation:</b>                      Name of the IAM agency created by the owner of the target bucket for OBS.</p> <p>You can select an existing IAM agency or create one. For details about how to create an agency, see <a href="#">Creating an IAM Agency</a>.</p> <p><b>Restrictions:</b>                      By default, the IAM agency only requires the <b>PutObject</b> permission to upload logs to the target bucket. If default encryption is enabled for the target bucket, the agency also requires the <b>KMS Administrator</b> permission in the region where the target bucket is located.</p> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
targetBucket Name	String	No	<p><b>Explanation:</b> Name of the bucket for storing log files.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• This bucket must be in the same region as the bucket with logging enabled.</li> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
logfilePrefix	String	No	<p><b>Explanation:</b> Name prefix for log files stored in the target bucket.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
targetGrants List	List< <a href="#">GrantAndPermission</a> >	No	<b>Explanation:</b> Permission information list of grantees, which defines grantees and their permissions for log files. For details, see <a href="#">Table 15-13</a> .

**Table 15-13** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 15-14</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 15-17</a> . <b>Default value:</b> None
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>

**Table 15-14** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<a href="#">CanonicalGrantee</a>	<a href="#">CanonicalGrantee</a>	Yes	<b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 15-15</a> .
<a href="#">GroupGrantee</a>	<a href="#">GroupGrantee</a>	Yes	<b>Explanation:</b> Grantee (user group) information. <b>Value range:</b> See <a href="#">Table 15-16</a> . <b>Default value:</b> None

**Table 15-15** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<b>Explanation:</b> Account (domain) ID of the grantee. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Parameter description:</b> Account name of the grantee. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 15-16** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 15-17** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACP	READ_ACP	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>

Constant	Default Value	Description
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

## Code Examples

This example returns the logging configuration of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketLoggingConfiguration;
public class GetBucketLogging001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
```

```
try {
    // View the bucket logging configuration.
    BucketLoggingConfiguration config = obsClient.getBucketLogging("examplebucket");
    System.out.println("TargetBucketName:" + config.getTargetBucketName());
    System.out.println("LogfilePrefix:" + config.getLogfilePrefix());
    System.out.println("getBucketLogging successfully");
} catch (ObsException e) {
    System.out.println("getBucketLogging failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("getBucketLogging failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining the Bucket Logging Configuration](#)
- [\(GitHub\) Sample Code for Obtaining the Bucket Logging Configuration](#)
- [OBS Error Codes](#)



# 16 Static Website Hosting (SDK for Java)

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## 16.1 Overview (SDK for Java)

To host your static website on OBS, you can upload static website files to your bucket as objects, configure the public read permission for the objects, and then configure static website hosting for your bucket. After this, when third-party users access your websites, they actually access the objects in your bucket in OBS. When using static website hosting, you can configure request redirection to redirect specific or all requests.

For more information, see [Static Website Hosting](#).

## 16.2 Hosting Website Files in a Bucket (SDK for Java)

### Function

To host your static website on OBS, you can upload static website files to your bucket as objects, configure the public read permission for the objects, and then configure static website hosting for your bucket. After this, when third-party users access your website, they are accessing the objects in your bucket.

### Restrictions

- To upload an object, you must be the bucket owner or have the required permission (**obs:object:PutObject** in IAM or **PutObject** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Configuring an Object Policy](#).
- To configure an ACL for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketAcl** in IAM or **PutBucketAcl** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

## Method

1. Uploading an object:  
obsClient.putObject([PutObjectRequest request](#))
2. Setting the ACL for the object:  
obsClient.setObjectAcl([SetObjectAclRequest acl](#))

## Request Parameters for Uploading an Object

**Table 16-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">PutObjectRequest</a>	Yes	<b>Explanation:</b> Request parameters for uploading an object. For details, see <a href="#">Table 16-2</a> .

**Table 16-2** PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
metadata	<a href="#">ObjectMetadata</a>	No	<p><b>Explanation:</b> Object metadata. For details, see <a href="#">Table 16-19</a>.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> ACL that can be pre-defined when an object is created. Refer to <a href="#">Table 16-12</a> to choose the option you need. For details about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 16-21</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 16-12</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseKmsHeader	<a href="#">SseKmsHeader</a>	No	<b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 16-7</a> . <b>Default value:</b> None
sseCHeader	<a href="#">SseCHeader</a>	No	<b>Explanation:</b> Server-side encryption header. For details, see <a href="#">Table 16-8</a> . <b>Default value:</b> None
input	java.io.InputStream	No	<b>Explanation:</b> Data stream of the object to be uploaded. <b>Default value:</b> None
file	java.io.File	No	<b>Explanation:</b> File stream of the object to be uploaded. <b>Default value:</b> None
extensionPermissionMap	Map< <a href="#">ExtensionObjectPermissionEnum</a> , Set<String>>	No	<b>Explanation:</b> A permission map for granting bucket ACL permissions to one or more accounts. <a href="#">ExtensionObjectPermissionEnum</a> specifies the permissions to grant, and <a href="#">Set&lt;String&gt;</a> describes the list of account IDs (indicated by <b>domain_id</b> ) the granted permissions apply to. <b>Value range:</b> <ul style="list-style-type: none"> <li>For details about the available permissions, see <a href="#">Table 16-6</a>.</li> <li>To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></li> </ul> <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	<p><b>Explanation:</b> Expiration time of the object. The calculation starts from the time when the object was last modified. Once the object expires, it is automatically deleted.</p> <p><b>Restrictions:</b> This parameter can be configured only during object upload and cannot be modified by calling a metadata API.</p> <p><b>Value range:</b> An integer greater than 0, in days.</p> <p><b>Default value:</b> None</p>
progressListener	<a href="#">Progress Listener</a>	No	<p><b>Explanation:</b> Upload progress. For details, see <a href="#">Table 16-3</a>.</p>
encodeHeaders	boolean	No	<p><b>Explanation:</b> Whether to enable OBS to automatically encode request headers. Due to HTTP coding restrictions, only ASCII characters can be sent. If your request headers contain full-width characters, the SDK will URL encode these characters before sending the request. When you use a browser to access the object metadata, the browser automatically decodes the data.</p> <p><b>Value range:</b> <b>true:</b> Encoding with SDK is enabled. <b>false:</b> Encoding with SDK is disabled.</p> <p><b>Default value:</b> true</p>

**Table 16-3** ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
<a href="#">progressChanged</a>	void	Yes	<p><b>Explanation:</b> Used for obtaining the progress. For details, see <a href="#">Table 16-4</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-4** progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	<a href="#">ProgressStatus</a>	Yes	<p><b>Explanation:</b> Progress data. For details, see <a href="#">Table 16-5</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-5** ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average transmission rate.
getInstantaneousSpeed()	double	Instantaneous transmission rate.
getTransferPercentage()	int	Transmission progress, in percentage.
getNewlyTransferredBytes()	long	Number of the newly transmitted bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted.
getTotalBytes()	long	Number of the bytes to be transmitted.

**Table 16-6** ExtensionObjectPermissionEnum

Constant	Description
GRANT_READ	Grants a specific tenant the permissions to read the object and object metadata.
GRANT_READ_ACP	Grants a specific tenant the permissions to obtain the object ACL.
GRANT_WRITE_ACP	Grants a specific tenant the permissions to write the object ACL.
GRANT_FULL_CONTROL	Grants a specific tenant the permissions to read the content, metadata, and ACL of the object and write the object ACL.

**Table 16-7** SseKmsHeader

Parameter	Type	Mandatory (Yes/No)	Description
encryption	<a href="#">ServerEncryption</a>	Yes	<p><b>Explanation:</b> SSE-KMS is used for encrypting objects on the server side.</p> <p><b>Value range:</b> kms. For details, see <a href="#">Table 16-9</a>.</p> <p><b>Default value:</b> None</p>
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only KMS is supported.</p> <p><b>Value range:</b> See <a href="#">Table 16-10</a>.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
kmsKeyId	String	No	<p><b>Explanation:</b> ID of the KMS master key when SSE-KMS is used.</p> <p><b>Value range:</b> Valid value formats are as follows: 1. <i>regionID:domainID:key/key_id</i> 2. <i>key_id</i></p> <p>In the preceding formats:</p> <ul style="list-style-type: none"> <li><i>regionID</i> indicates the ID of the region where the key belongs.</li> <li><i>domainID</i> indicates the ID of the account where the key belongs. To obtain it, see <a href="#">How Do I Get My Account ID and User ID?</a></li> <li><i>key_id</i> indicates the ID of the key created on Data Encryption Workshop (DEW).</li> </ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"> <li>If this parameter is not specified, the default master key will be used.</li> <li>If there is no such a default master key, OBS will create one and use it by default.</li> </ul>

**Table 16-8** SseCHeader

Parameter	Type	Mandatory (Yes/No)	Description
algorithm	<a href="#">ServerAlgorithm</a>	Yes	<p><b>Explanation:</b> SSE-C is used for encrypting objects on the server side.</p> <p><b>Value range:</b> <b>AES256</b>, indicating AES is used to encrypt the object in SSE-C. For details, see <a href="#">Table 16-11</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
sseAlgorithm	<a href="#">SSEAlgorithmEnum</a>	No	<p><b>Explanation:</b> Encryption algorithm.</p> <p><b>Restrictions:</b> Only AES256 is supported.</p> <p><b>Value range:</b> See <a href="#">Table 16-10</a>.</p> <p><b>Default value:</b> None</p>
sseCKey	byte[]	Yes	<p><b>Explanation:</b> Key used for encrypting the object when SSE-C is used, in byte[] format.</p> <p><b>Default value:</b> None</p>
sseCKeyBase64	String	No	<p><b>Explanation:</b> Base64-encoded key used for encrypting the object when SSE-C is used.</p> <p><b>Default value:</b> None</p>

**Table 16-9** ServerEncryption

Constant	Default Value
OBS_KMS	kms

**Table 16-10** SSEAlgorithmEnum

Constant	Default Value
KMS	kms
AES256	AES256

**Table 16-11** ServerAlgorithm

Constant	Default Value
AES256	AES256

**Table 16-12** AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	Owner	No	<b>Explanation:</b> Bucket owner information. For details, see <a href="#">Table 16-13</a> .
delivered	boolean	No	<b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket. <b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket. <b>Default value:</b> <b>false</b>
grants	Set<GrantAndPermission>	No	<b>Explanation:</b> Grantee information. For details, see <a href="#">Table 16-14</a> .

**Table 16-13** Owner

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	<b>Explanation:</b> Account (domain) ID of the bucket owner. <b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None
displayName	String	No	<b>Explanation:</b> Account name of the owner. <b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a> <b>Default value:</b> None

**Table 16-14** GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	<a href="#">GranteeInterface</a>	Yes	<b>Explanation:</b> Grantees (users or user groups). For details, see <a href="#">Table 16-16</a> .
permission	<a href="#">Permission</a>	Yes	<b>Explanation:</b> Permissions to grant. <b>Value range:</b> See <a href="#">Table 16-15</a> . <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
delivered	boolean	No	<p><b>Explanation:</b> Whether the bucket ACL is applied to all objects in the bucket.</p> <p><b>Value range:</b> <b>true:</b> The bucket ACL is applied to all objects in the bucket. <b>false:</b> The bucket ACL is not applied to any objects in the bucket.</p> <p><b>Default value:</b> <b>false</b></p>

**Table 16-15** Permission

Constant	Default Value	Description
PERMISSION_READ	READ	<p>Read permission.</p> <p>A grantee with this permission for a bucket can obtain the list of objects, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>A grantee with this permission for an object can obtain the object content and metadata.</p>
PERMISSION_WRITE	WRITE	<p>Write permission.</p> <p>A grantee with this permission for a bucket can upload, overwrite, and delete any object or part in the bucket.</p> <p>This permission is not available for objects.</p>
PERMISSION_READ_ACL	READ_ACL	<p>Permission to read an ACL.</p> <p>A grantee with this permission can obtain the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p>

Constant	Default Value	Description
PERMISSION_WRITE_ACL	WRITE_ACP	<p>Permission to modify an ACL.</p> <p>A grantee with this permission can update the ACL of a bucket or object.</p> <p>A bucket or object owner has this permission for their bucket or object by default.</p> <p>This permission allows the grantee to change the access control policies, meaning the grantee has full control over a bucket or object.</p>
PERMISSION_FULL_CONTROL	FULL_CONTROL	<p>Full control access, including read and write permissions for a bucket and its ACL, or for an object and its ACL.</p> <p>A grantee with this permission for a bucket has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the bucket.</p> <p>A grantee with this permission for an object has <b>READ</b>, <b>WRITE</b>, <b>READ_ACP</b>, and <b>WRITE_ACP</b> permissions for the object.</p>

**Table 16-16** GranteeInterface

Parameter	Type	Mandatory (Yes/No)	Description
<b>CanonicalGrantee</b>	<b>CanonicalGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user) information. For details, see <a href="#">Table 16-17</a>.</p>
<b>GroupGrantee</b>	<b>GroupGrantee</b>	Yes	<p><b>Explanation:</b> Grantee (user group) information.</p> <p><b>Value range:</b> See <a href="#">Table 16-18</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-17** CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if <b>Type</b> is set to <b>Grantee User</b>	<p><b>Explanation:</b> Account (domain) ID of the grantee.</p> <p><b>Value range:</b> To obtain the account ID, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>
displayName	String	No	<p><b>Parameter description:</b> Account name of the grantee.</p> <p><b>Value range:</b> To obtain the account name, see <a href="#">How Do I Get My Account ID and User ID?</a></p> <p><b>Default value:</b> None</p>

**Table 16-18** GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.
LOG_DELIVERY	Log delivery group. This constant is deprecated.

**Table 16-19** ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	<p><b>Explanation:</b> Object size.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The object size in a single upload ranges from 0 to 5 GB.</li> <li>To upload files larger than 5 GB, <b>multipart uploads</b> should be used.</li> </ul> <p><b>Default value:</b> If this parameter is not specified, the SDK automatically calculates the size of the object.</p>
contentType	String	No	<p><b>Explanation:</b> MIME type of the object file. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data.</p> <p><b>Value range:</b> See <a href="#">What Is Content-Type (MIME)? (Java SDK)</a></p> <p><b>Default value:</b> If this parameter is not specified, the SDK determines the file type based on the suffix of the object name and assigns a value to the parameter. For example, if the suffix of the object name is <b>.xml</b>, the object is an <b>application/xml</b> file. If the suffix is <b>.html</b>, the object is a <b>text/html</b> file.</p>
contentEncoding	String	No	<p><b>Explanation:</b> <b>Content-Encoding</b> header in the response. It specifies which encoding is applied to the object.</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	<p><b>Explanation:</b> Provides a default file name for the requested object. When the object with the default file name is being downloaded or accessed, the content is displayed as part of a web page in the browser or as an attachment in a download dialog box.</p> <p><b>Default value:</b> None</p>
cacheControl	String	No	<p><b>Explanation:</b> <b>Cache-Control</b> header in the response. It specifies the cache behavior of the web page when an object is downloaded.</p> <p><b>Default value:</b> None</p>
contentType	String	No	<p><b>Explanation:</b> Language or language combination for visitors to customize and use. For details, see the definition of <b>ContentLanguage</b> in the HTTP protocol.</p> <p><b>Default value:</b> None</p>
expires	String	No	<p><b>Explanation:</b> The time a cached web page object expires.</p> <p><b>Restrictions:</b> The time must be in the GMT format.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	<p><b>Explanation:</b> Base64-encoded MD5 value of the file data. It is provided for the OBS server to verify data integrity. The OBS server will compare this MD5 value with the MD5 value calculated based on the file data. If the two values are not the same, HTTP status code <b>400</b> is returned.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The MD5 value of the file must be Base64 encoded.</li> <li>• If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object.</li> </ul> <p><b>Value range:</b> Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: <b>n58IG6hfM7vqI4K0vnWpog==</b></p> <p><b>Default value:</b> None</p>
storageClasses	<a href="#">StorageClassEnum</a>	No	<p><b>Explanation:</b> Storage class of an object that can be specified at object creation. If you do not specify this header, the object inherits the storage class of the bucket.</p> <p><b>Value range:</b> See <a href="#">Table 16-20</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
webSiteRedirectLocation	String	No	<p><b>Explanation:</b> If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to.</p> <p>The request is redirected to an object <b>anotherPage.html</b> in the same bucket: <b>WebsiteRedirectLocation:/anotherPage.html</b></p> <p>The request is redirected to an external URL <b>http://www.example.com/</b>: <b>WebsiteRedirectLocation:http://www.example.com/</b></p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must start with a slash (/), <b>http://</b>, or <b>https://</b> and cannot exceed 2 KB.</li> <li>OBS only supports redirection for objects in the root directory of a bucket.</li> </ul> <p><b>Default value:</b> None</p>
nextPosition	long	No	<p><b>Explanation:</b> Start position for the next append upload.</p> <p><b>Value range:</b> 0 to the object length, in bytes.</p> <p><b>Default value:</b> None</p>
appendable	boolean	No	<p><b>Explanation:</b> Whether the object is appendable.</p> <p><b>Value range:</b> <b>true:</b> The object is appendable. <b>false:</b> The object is not appendable.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	<p><b>Explanation:</b> User-defined metadata of the object. To define it, you can add a header starting with <b>x-obs-meta-</b> in the request. In <b>Map</b>, the <b>String</b> key indicates the name of the user-defined metadata that starts with <b>x-obs-meta-</b>, and the <b>Object</b> value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use <b>ObsClient.getObjectMetadata</b>. For details, see <a href="#">Obtaining Object Metadata (SDK for Java)</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total.</li> <li>• When you call <b>ObsClient.getObject</b> to download an object, its user-defined metadata will also be downloaded.</li> </ul> <p><b>Default value:</b> None</p>

**Table 16-20** StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class
WARM	WARM	Infrequent Access storage class.
COLD	COLD	Archive storage class.

**Table 16-21** ACL

Constant	Description
AccessControllist.REST_CANNED_PRIVATE	Private read/write. A bucket or object can only be accessed by its owner.

Constant	Description
AccessControllist.REST_CANNED_PUBLIC_READ	<p>Public read.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, bucket metadata, and object versions in the bucket.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CANNED_PUBLIC_READ_WRITE	<p>Public read/write.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart uploads, upload parts, assemble parts, copy parts, and cancel multipart upload tasks.</p> <p>If this permission is granted on an object, anyone can read the content and metadata of the object.</p>
AccessControllist.REST_CANNED_PUBLIC_READ_DELIVERED	<p>Public read on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart tasks, and bucket metadata, and can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>
AccessControllist.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	<p>Public read/write on a bucket as well as objects in the bucket.</p> <p>If this permission is granted on a bucket, anyone can read the object list, multipart uploads, and bucket metadata, and can upload or delete objects, initiate multipart upload tasks, upload parts, assemble parts, copy parts, and abort multipart uploads. They can also read the content and metadata of the objects in the bucket.</p> <p>This permission cannot be granted on objects.</p>

## Request Parameters for Setting an Object ACL

**Table 16-22** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetObjectACLRequest</a>	Yes	<b>Explanation:</b> Request parameters for setting an object ACL. For details, see <a href="#">Table 16-23</a> .

**Table 16-23** SetObjectAclRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
versionId	String	No	<p><b>Explanation:</b> Object version ID.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
acl	<a href="#">AccessControlList</a>	No	<p><b>Explanation:</b> An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. For more information about ACLs, see <a href="#">ACLs</a>.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>To use a pre-defined ACL, see <a href="#">Table 16-21</a> for the available policies.</li> <li>To use a user-defined ACL, see <a href="#">Table 16-12</a> to configure the required parameters.</li> </ul> <p><b>Default value:</b> AccessControlList.REST_CANNED_PRIVATE</p>



## Responses for Uploading an Object

**Table 16-24** PutObjectResult

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response.</p> <p>For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> Response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>
storageClass	<a href="#">StorageClassEnum</a>	<p><b>Explanation:</b> Object storage class. If the storage class is Standard, leave this parameter blank.</p> <p><b>Value range:</b> See <a href="#">Table 16-20</a>.</p> <p><b>Default value:</b> None</p>
versionId	String	<p><b>Explanation:</b> Object version ID. If versioning is enabled for the bucket, the object version number will be returned.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
etag	String	<p><b>Explanation:</b> ETag of an object, which is a Base64-encoded 128-bit MD5 digest. 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 is <b>A</b> when an object is uploaded and is <b>B</b> when the object is downloaded, the object content is changed. The ETag reflects changes only to the contents of the object, not its metadata. An object created by an upload or copy operation has a unique ETag.</p> <p><b>Restrictions:</b> If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object.</p> <p><b>Value range:</b> The value must contain 32 characters.</p> <p><b>Default value:</b> None</p>
objectKey	String	<p><b>Explanation:</b> Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name.</p> <p>For example, if the address for accessing the object is <b>examplebucket.obs.eu-west-101.myhuaweicloud.eu/folder/test.txt</b>, the object name is <b>folder/test.txt</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
bucketName	String	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-bucket</b> or <b>my-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>

## Responses for Setting an Object ACL

**Table 16-25** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

## Code Examples

This example configures static website hosting for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.AccessControlList;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class PutObject001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Sample code is as follows:
            // Upload an object and set the MIME type for the object.
            PutObjectRequest request = new PutObjectRequest();
            request.setBucketName("examplebucket");
            request.setObjectKey("test.html");
            request.setFile(new File("localfile.html"));
            ObjectMetadata metadata = new ObjectMetadata();
            metadata.setContentType("text/html");
            request.setMetadata(metadata);
            obsClient.putObject(request);
            // Set the object ACL to public read.
            obsClient.setObjectAcl("examplebucket", "test.html",
            AccessControlList.REST_CANNED_PUBLIC_READ);
            System.out.println("putObject successfully");
        } catch (ObsException e) {
```

```
System.out.println("putObject failed");
// Request failed. Print the HTTP status code.
System.out.println("HTTP Code:" + e.getResponseCode());
// Request failed. Print the server-side error code.
System.out.println("Error Code:" + e.getErrorCode());
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

#### NOTE

In this code example, you can use <https://bucketname.your-endpoint/test.html> to access the hosted file in the browser.

## Helpful Links

- [Uploading Objects - POST](#)
- [Setting an Object ACL](#)
- [OBS Error Codes](#)

## 16.3 Configuring Static Website Hosting (SDK for Java)

### Function

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. Typical use cases include:

- Redirecting all requests to another website
- Redirecting specific requests to another website

This API configures static website hosting for a bucket.

### Restrictions

- Periods (.) should be avoided in the target bucket name, or there may be certificate verification failures on the client when you use HTTPS for access.
- The request body of the website configuration cannot exceed 10 KB.
- To configure static website hosting for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketWebsite** in IAM or **PutBucketWebsite** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

## Method

obsClient.setBucketWebsite(final [SetBucketWebsiteRequest request](#))

## Request Parameters

**Table 16-26** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetBucketWebsiteRequest</a>	Yes	<b>Explanation:</b> Request parameters for configuring website hosting. For details, see <a href="#">Table 16-27</a> .

**Table 16-27** SetBucketWebsiteRequest

Parameter	Type	Man dato ry (Yes /No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my.bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Value range:</b> The value must contain 3 to 63 characters.</p>
websiteConfig	<b>WebsiteConf iguration</b>	Yes	<p><b>Explanation:</b> Static website hosting configurations. For details, see <a href="#">Table 16-28</a>.</p>

**Table 16-28** WebsiteConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
suffix	String	No	<p><b>Explanation:</b> Suffix that is appended to the request for a directory. For example, if the suffix is <b>index.html</b> and you request <b>samplebucket/images/</b>, the returned data will be for the object named <b>images/index.html</b> in the bucket <b>samplebucket</b>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• <b>key</b>, <b>suffix</b>, and <b>routeRules</b> must be used together and they cannot be used with <b>redirectAllRequestsTo</b>.</li> <li>• When <b>key</b>, <b>suffix</b>, and <b>routeRules</b> are used together, <b>routeRules</b> can be left blank.</li> <li>• If you configure <b>key</b>, <b>suffix</b>, and <b>routeRules</b>, they must not be all left blank.</li> </ul> <p><b>Value range:</b> This parameter can neither be left blank nor contain slashes (/).</p> <p><b>Default value:</b> None</p>



Parameter	Type	Mandatory (Yes/No)	Description
key	String	No	<p><b>Explanation:</b> Object name to use when a 4XX error occurs. This parameter specifies the web page to display when an error occurs.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• <b>key</b>, <b>suffix</b>, and <b>routeRules</b> must be used together and they cannot be used with <b>redirectAllRequestsTo</b>.</li> <li>• When <b>key</b>, <b>suffix</b>, and <b>routeRules</b> are used together, <b>routeRules</b> can be left blank.</li> <li>• If you configure <b>key</b>, <b>suffix</b>, and <b>routeRules</b>, they must not be all left blank.</li> </ul> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
routeRules	List< <a href="#">Route Rule</a> >	No	<p><b>Explanation:</b> List of routing rules. For details, see <a href="#">Table 16-31</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• <b>key</b>, <b>suffix</b>, and <b>routeRules</b> must be used together and they cannot be used with <b>redirectAllRequestsTo</b>.</li> <li>• When <b>key</b>, <b>suffix</b>, and <b>routeRules</b> are used together, <b>routeRules</b> can be left blank.</li> <li>• If you configure <b>key</b>, <b>suffix</b>, and <b>routeRules</b>, they must not be all left blank.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
redirectAllRequestsTo	<a href="#">RedirectAllRequest</a>	No	<p><b>Explanation:</b> Redirection rules for all requests. For details, see <a href="#">Table 16-29</a>.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• <b>key</b>, <b>suffix</b>, and <b>routeRules</b> must be used together and they cannot be used with <b>redirectAllRequestsTo</b>.</li> <li>• If you configure <b>redirectAllRequestsTo</b>, it must not be left blank.</li> </ul> <p><b>Default value:</b> None</p>

**Table 16-29** RedirectAllRequest

Parameter	Type	Mandatory (Yes/No)	Description
hostName	String	Yes	<p><b>Explanation:</b> Host name used for redirection, for example, <b>www.example.com</b>.</p> <p><b>Restrictions:</b> The host name must comply with the host name rules.</p> <p><b>Default value:</b> None</p>
protocol	<a href="#">ProtocolEnum</a>	No	<p><b>Explanation:</b> Protocol used for redirection.</p> <p><b>Value range:</b> See <a href="#">Table 16-30</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-30** ProtocolEnum

Constant	Default Value	Description
HTTP	http	HTTP protocol used for redirection.
HTTPS	https	HTTPS protocol used for redirection.

**Table 16-31** RouteRule

Parameter	Type	Mandatory (Yes/No)	Description
condition	<a href="#">RouteRuleCondition</a>	No	<b>Explanation:</b> Conditions of a redirection rule. For details, see <a href="#">Table 16-32</a> .
redirect	<a href="#">Redirect</a>	Yes	<b>Explanation:</b> Details about the redirection. For details, see <a href="#">Table 16-33</a> .

**Table 16-32** RouteRuleCondition

Parameter	Type	Mandatory (Yes/No)	Description
keyPrefixEquals	String	No	<p><b>Explanation:</b> Object name prefix for the redirection to take effect. If the name prefix of the requested object is the same as the value specified for this parameter, the redirection rule takes effect.</p> <p>For example, to redirect the requests for the object <b>ExamplePage.html</b>, set <b>keyPrefixEquals</b> to <b>ExamplePage.html</b>.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>httpErrorCodeReturnedEquals</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
httpErrorCodeReturnedEquals	String	No	<p><b>Explanation:</b> HTTP error code for the redirection to take effect. If there is an error, and the error code returned is the same as the value specified for this parameter, the redirection rule takes effect.</p> <p>For example, if you want to redirect requests to <b>NotFound.html</b> when HTTP error code <b>404</b> is returned, set <b>httpErrorCodeReturnedEquals</b> to <b>404</b> in <b>RouteRuleCondition</b>, and set <b>replaceKeyWith</b> to <b>NotFound.html</b> in <b>Redirect</b>.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>keyPrefixEquals</b>.</p> <p><b>Value range:</b> See <a href="#">Error Codes</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-33** Redirect

Parameter	Type	Mandatory (Yes/No)	Description
Protocol	ProtocolEnum	No	<p><b>Explanation:</b> Protocol used for redirection.</p> <p><b>Value range:</b> See <a href="#">Table 16-30</a>.</p> <p><b>Default value:</b> None</p>
hostName	String	No	<p><b>Explanation:</b> Host name used for redirection.</p> <p><b>Default value:</b> None</p>
replaceKeyPrefix-With	String	No	<p><b>Explanation:</b> Object name prefix used in the redirection request.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>replaceKeyWith</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
replaceKeyWith	String	No	<p><b>Explanation:</b> Object name used in the redirection request.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>replaceKeyPrefixWith</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
httpRedirectCode	String	No	<p><b>Explanation:</b> HTTP status code in the response to the redirect request. For details, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>

## Responses

**Table 16-34** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>
responseHeaders	Map<String, Object>	<p><b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header.</p> <p><b>Default value:</b> None</p>

## Code Example: Configuring the Default Home Page and Error Pages

This example configures the default homepage and error pages for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.WebsiteConfiguration;
public class SetBucketWebsite001
```

```
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Sample code is as follows:
            WebsiteConfiguration config = new WebsiteConfiguration();
            // Configure the default homepage.
            config.setSuffix("index.html");
            // Configure the error pages.
            config.setKey("error.html");
            obsClient.setBucketWebsite("examplebucket", config);
            System.out.println("setBucketWebsite successfully");
        } catch (ObsException e) {
            System.out.println("setBucketWebsite failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("setBucketWebsite failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Code Example: Configuring a Redirection Rule

This example configures a redirection rule for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ProtocolEnum;
import com.obs.services.model.Redirect;
import com.obs.services.model.RouteRule;
import com.obs.services.model.RouteRuleCondition;
import com.obs.services.model.WebsiteConfiguration;
public class SetBucketWebsite002
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
```

```
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");

// Create an ObsClient instance.
// Use the permanent AK/SK pair to initialize the client.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Sample code is as follows:
    WebsiteConfiguration config = new WebsiteConfiguration();
    // Configure the default homepage.
    config.setSuffix("index.html");
    // Configure the error pages.
    config.setKey("error.html");
    RouteRule rule = new RouteRule();
    Redirect r = new Redirect();
    r.setHostName("www.example.com");
    r.setHttpRedirectCode("305");
    r.setRedirectProtocol(ProtocolEnum.HTTP);
    r.setReplaceKeyPrefixWith("replacekeyprefix");
    rule.setRedirect(r);
    RouteRuleCondition condition = new RouteRuleCondition();
    condition.setHttpErrorCodeReturnedEquals("404");
    condition.setKeyPrefixEquals("keyprefix");
    rule.setCondition(condition);
    config.getRouteRules().add(rule);
    obsClient.setBucketWebsite("examplebucket", config);
    System.out.println("setBucketWebsite successfully");
} catch (ObsException e) {
    System.out.println("setBucketWebsite failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("setBucketWebsite failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Code Example: Configuring Redirection for All Requests

This example configures redirection of all requests for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ProtocolEnum;
import com.obs.services.model.RedirectAllRequest;
```



```
import com.obs.services.model.WebsiteConfiguration;
public class SetBucketWebsite003
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Sample code is as follows:
            WebsiteConfiguration config = new WebsiteConfiguration();
            RedirectAllRequest redirectAll = new RedirectAllRequest();
            redirectAll.setHostName("www.example.com");
            redirectAll.setRedirectProtocol(ProtocolEnum.HTTP);
            config.setRedirectAllRequestsTo(redirectAll);
            obsClient.setBucketWebsite("examplebucket", config);
            System.out.println("setBucketWebsite successfully");
        } catch (ObsException e) {
            System.out.println("setBucketWebsite failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("setBucketWebsite failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Configuring Static Website Hosting for a Bucket](#)
- [\(GitHub\) Sample Code for Configuring Static Website Hosting for a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Static Website Hosting](#)

## 16.4 Obtaining Static Website Hosting Configurations (SDK for Java)

### Function

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. Typical use cases include:

- Redirecting all requests to another website
- Redirecting specific requests to another website

This API returns the static website hosting configurations of the bucket.

### Restrictions

- To obtain the static website hosting configurations of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketWebsite** in IAM or **GetBucketWebsite** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.getBucketWebsite(final [BaseBucketRequest request](#))

### Request Parameters

**Table 16-35** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters related to basic bucket information. For details, see <a href="#">Table 16-36</a> .

**Table 16-36** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 16-37** WebsiteConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
suffix	String	No	<p><b>Explanation:</b> Suffix that is appended to the request for a directory. For example, if the suffix is <b>index.html</b> and you request <b>samplebucket/images/</b>, the returned data will be for the object named <b>images/index.html</b> in the bucket <b>samplebucket</b>.</p> <p><b>Value range:</b> This parameter can neither be left blank nor contain slashes (/).</p> <p><b>Default value:</b> None</p>
key	String	No	<p><b>Explanation:</b> Object name to use when a <b>4XX</b> error occurs. This parameter specifies the web page to display when an error occurs.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
redirectAllRequestsTo	<a href="#">RedirectAllRequest</a>	No	<p><b>Explanation:</b> Redirection rules for all requests. For details, see <a href="#">Table 16-38</a>.</p>
routeRules	List< <a href="#">RouteRule</a> >	No	<p><b>Explanation:</b> List of routing rules. For details, see <a href="#">Table 16-40</a>.</p>

**Table 16-38** RedirectAllRequest

Parameter	Type	Mandatory (Yes/No)	Description
hostName	String	Yes	<p><b>Explanation:</b> Host name used for redirection, for example, <b>www.example.com</b>.</p> <p><b>Restrictions:</b> The host name must comply with the host name rules.</p> <p><b>Default value:</b> None</p>
protocol	<a href="#">ProtocolEnum</a>	No	<p><b>Explanation:</b> Protocol used for redirection.</p> <p><b>Value range:</b> See <a href="#">Table 16-39</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-39** ProtocolEnum

Constant	Default Value	Description
HTTP	http	HTTP protocol used for redirection.
HTTPS	https	HTTPS protocol used for redirection.

**Table 16-40** RouteRule

Parameter	Type	Mandatory (Yes/No)	Description
condition	<a href="#">RouteRuleCondition</a>	No	<p><b>Explanation:</b> Conditions of a redirection rule. For details, see <a href="#">Table 16-41</a>.</p>
redirect	<a href="#">Redirect</a>	Yes	<p><b>Explanation:</b> Details about the redirection. For details, see <a href="#">Table 16-42</a>.</p>

**Table 16-41** RouteRuleCondition

Parameter	Type	Mandatory (Yes/No)	Description
keyPrefixEquals	String	No	<p><b>Explanation:</b> Object name prefix for the redirection to take effect. If the name prefix of the requested object is the same as the value specified for this parameter, the redirection rule takes effect.</p> <p>For example, to redirect the requests for the object <b>ExamplePage.html</b>, set <b>keyPrefixEquals</b> to <b>ExamplePage.html</b>.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>httpErrorCodeReturnedEquals</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
httpErrorCodeReturnedEquals	String	No	<p><b>Explanation:</b> HTTP error code for the redirection to take effect. If there is an error, and the error code returned is the same as the value specified for this parameter, the redirection rule takes effect.</p> <p>For example, if you want to redirect requests to <b>NotFound.html</b> when HTTP error code <b>404</b> is returned, set <b>httpErrorCodeReturnedEquals</b> to <b>404</b> in <b>RouteRuleCondition</b>, and set <b>replaceKeyWith</b> to <b>NotFound.html</b> in <b>Redirect</b>.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>keyPrefixEquals</b>.</p> <p><b>Value range:</b> See <a href="#">Error Codes</a>.</p> <p><b>Default value:</b> None</p>

**Table 16-42** Redirect

Parameter	Type	Mandatory (Yes/No)	Description
Protocol	ProtocolEnum	No	<p><b>Explanation:</b> Protocol used for redirection.</p> <p><b>Value range:</b> See <a href="#">Table 16-39</a>.</p> <p><b>Default value:</b> None</p>
hostName	String	No	<p><b>Explanation:</b> Host name used for redirection.</p> <p><b>Default value:</b> None</p>
replaceKeyPrefix-With	String	No	<p><b>Explanation:</b> Object name prefix used in the redirection request.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>replaceKeyWith</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>
replaceKeyWith	String	No	<p><b>Explanation:</b> Object name used in the redirection request.</p> <p><b>Restrictions:</b> This parameter cannot be used together with <b>replaceKeyPrefixWith</b>.</p> <p><b>Value range:</b> The value must contain 1 to 1,024 characters.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
httpRedirectCode	String	No	<b>Explanation:</b> HTTP status code in the response to the redirect request. For details, see <a href="#">Status Code</a> . <b>Default value:</b> None

## Code Examples

This example returns the website configuration of bucket **examplebucket** using **obsClient.getBucketWebsite**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.RouteRule;
import com.obs.services.model.WebsiteConfiguration;
public class GetBucketWebsite001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // View the website configuration of the bucket.
            WebsiteConfiguration config = obsClient.getBucketWebsite("examplebucket");
            System.out.println("Key:" + config.getKey());
            System.out.println("Suffix:" + config.getSuffix());
            for(RouteRule rule : config.getRouteRules()){
                System.out.println("rule:" + rule);
            }
            System.out.println("getBucketWebsite successfully");
        } catch (ObsException e) {
            System.out.println("getBucketWebsite failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
        }
    }
}
```



```
// Request failed. Print the error details.
System.out.println("Error Message:" + e.getErrorMessage());
// Request failed. Print the request ID.
System.out.println("Request ID:" + e.getErrorRequestId());
System.out.println("Host ID:" + e.getErrorHostId());
e.printStackTrace();
} catch (Exception e) {
    System.out.println("getBucketWebsite failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Obtaining the Static Website Hosting Configuration of a Bucket](#)
- [\(GitHub\) Sample Code for Obtaining Static Website Hosting for a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Static Website Hosting](#)

## 16.5 Deleting Static Website Hosting Configurations (SDK for Java)

### Function

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. Typical use cases include:

- Redirecting all requests to another website
- Redirecting specific requests to another website

This API deletes the static website hosting configurations of a bucket.

### Restrictions

- To delete the static website hosting configurations of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucketWebsite** in IAM or **DeleteBucketWebsite** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.deleteBucketWebsite(final [BaseBucketRequest request](#))

## Request Parameters

**Table 16-43** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters related to basic bucket information. For details, see <a href="#">Table 16-44</a> .

**Table 16-44** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 16-45** Common response headers

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

## Code Examples

This example deletes the website configuration of bucket **examplebucket** using **obsClient.deleteBucketWebsite**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteBucketWebsite001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
```

```
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Delete the website configuration of the bucket.
    obsClient.deleteBucketWebsite("examplebucket");
    System.out.println("deleteBucketWebsite successfully");
} catch (ObsException e) {
    System.out.println("deleteBucketWebsite failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteBucketWebsite failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting the Static Website Hosting Configuration of a Bucket](#)
- [\(GitHub\) Sample Code for Deleting Static Website Hosting for a Bucket](#)
- [OBS Error Codes](#)
- [FAQ for Static Website Hosting](#)

# 17 Bucket Tag Management (SDK for Java)

---

## 17.1 Overview (SDK for Java)

Tags are used to identify and classify OBS buckets.

## 17.2 Configuring Tags for a Bucket (SDK for Java)

### Function

If you add tags to a bucket, SDRs generated for the requests sent to this bucket will include these tags, so you can use the tags to classify SDRs for detailed cost analysis. For example, if you have an application that uploads its running data to a bucket, you can tag the bucket with the application name. In this manner, the costs of the application can be analyzed using tags in SDRs.

This API adds tags to a bucket.

### Restrictions

- A bucket can have a maximum of 10 tags.
- To configure tags for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketTagging** in IAM or **PutBucketTagging** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.setBucketTagging(final [SetBucketTaggingRequest request](#))

## Request Parameters

**Table 17-1** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">SetBucketTaggingRequest</a>	Yes	<b>Explanation:</b> Request parameters for setting bucket tags. For details, see <a href="#">Table 17-2</a> .

**Table 17-2** SetBucketTaggingRequest

Parameter	Type	Man dato ry (Yes /No)	Description
bucketName	String	Yes	<p><b>Explanation:</b> Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name: <ul style="list-style-type: none"> <li>– Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>– Cannot be formatted as an IP address.</li> <li>– Cannot start or end with a hyphen (-) or period (.).</li> <li>– Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>– Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b> None</p>
bucketTagInfo	<b>BucketTagInfo</b>	Yes	<p><b>Explanation:</b> Bucket tag information. For details, see <a href="#">Table 17-3</a>.</p>



**Table 17-3** BucketTagInfo

Parameter	Type	Mandatory (Yes/No)	Description
tagSet	<a href="#">TagSet</a>	Yes	<b>Explanation:</b> Tag set. For details, see <a href="#">Table 17-4</a> .

**Table 17-4** TagSet

Parameter	Type	Mandatory (Yes/No)	Description
tags	List< <a href="#">Tag</a> >	Yes	<b>Explanation:</b> Tag list. For details, see <a href="#">Table 17-5</a> .

**Table 17-5** Tag

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	<p><b>Explanation:</b> Tag key.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The tag key in the same bucket must be unique.</li> <li>• You can define tags or select the ones predefined on TMS.</li> <li>• The value must contain 1 to 36 characters.</li> <li>• Unicode is supported.</li> <li>• The value cannot start or end with a space or contain commas (,), asterisks (*), vertical bars ( ), slashes (/), less-than signs (&lt;), greater-than signs (&gt;), equal signs (=), backslashes (\), or control characters in ASCII from 0x00 to 0x1F.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
value	String	Yes	<p><b>Explanation:</b> Tag value.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A tag value can be duplicate or left blank.</li> <li>• The value must contain 0 to 43 characters.</li> <li>• Unicode is supported.</li> <li>• The value cannot contain commas (,), asterisks (*), vertical bars ( ), slashes (/), less-than signs (&lt;), greater-than signs (&gt;), equal signs (=), backslashes (\), or control characters in ASCII from 0x00 to 0x1F.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Default value:</b> None</p>

## Responses

**Table 17-6** Common response headers

Parameter	Type	Description
statusCode	int	<p><b>Explanation:</b> HTTP status code.</p> <p><b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a>.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Description
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

## Code Examples

This example configures tags for bucket **examplebucket** using **ObsClient.setBucketTagging**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketTagInfo;
public class SetBucketTagging001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Configure tags for the bucket.
            BucketTagInfo bucketTagInfo = new BucketTagInfo();
            BucketTagInfo.TagSet tagSet = new BucketTagInfo.TagSet();
            tagSet.addTag("tag1", "value1");
            tagSet.addTag("tag2", "value2");
            bucketTagInfo.setTagSet(tagSet);
            obsClient.setBucketTagging("examplebucket", bucketTagInfo);
            System.out.println("setBucketTagging successfully");
        } catch (ObsException e) {
            System.out.println("setBucketTagging failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
        }
    }
}
```

```

        System.out.println("Request ID:" + e.getErrorRequestId());
        System.out.println("Host ID:" + e.getErrorHostId());
        e.printStackTrace();
    } catch (Exception e) {
        System.out.println("setBucketTagging failed");
        // Print other error information.
        e.printStackTrace();
    }
}
}

```

## Helpful Links

- [Configuring Tags for a Bucket](#)
- [\(GitHub\) Sample Code for Configuring Bucket Tags](#)
- [OBS Error Codes](#)
- [FAQ for Bucket Tags](#)

## 17.3 Obtaining Bucket Tags (SDK for Java)

### Function

If you add tags to a bucket, SDRs generated for the requests sent to this bucket will include these tags, so you can use the tags to classify SDRs for detailed cost analysis. For example, if you have an application that uploads its running data to a bucket, you can tag the bucket with the application name. In this manner, the costs of the application can be analyzed using tags in SDRs.

This API returns the tags of a bucket.

### Restrictions

- To obtain the bucket tags, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketTagging** in IAM or **GetBucketTagging** in a bucket policy). For details, see [Introduction to OBS Access Control, IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.getBucketTagging(final [BaseBucketRequest request](#))

### Request Parameters

**Table 17-7** List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters related to basic bucket information. For details, see <a href="#">Table 17-8</a> .

**Table 17-8** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 17-9** BucketTagInfo

Parameter	Type	Description
tagSet	<a href="#">TagSet</a>	<b>Explanation:</b> Tag set. For details, see <a href="#">Table 17-10</a> .
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

**Table 17-10** TagSet

Parameter	Type	Description
tags	List< <a href="#">Tag</a> >	<b>Explanation:</b> Tag list. For details, see <a href="#">Table 17-11</a> .

**Table 17-11** Tag

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	<p><b>Explanation:</b> Tag key.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• The tag key in the same bucket must be unique.</li> <li>• You can define tags or select the ones predefined on TMS.</li> <li>• The value must contain 1 to 36 characters.</li> <li>• Unicode is supported.</li> <li>• The value cannot start or end with a space or contain commas (,), asterisks (*), vertical bars ( ), slashes (/), less-than signs (&lt;), greater-than signs (&gt;), equal signs (=), backslashes (\), or control characters in ASCII from 0x00 to 0x1F.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Default value:</b> None</p>
value	String	Yes	<p><b>Explanation:</b> Tag value.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A tag value can be duplicate or left blank.</li> <li>• The value must contain 0 to 43 characters.</li> <li>• Unicode is supported.</li> <li>• The value cannot contain commas (,), asterisks (*), vertical bars ( ), slashes (/), less-than signs (&lt;), greater-than signs (&gt;), equal signs (=), backslashes (\), or control characters in ASCII from 0x00 to 0x1F.</li> <li>• The value is case-sensitive.</li> </ul> <p><b>Default value:</b> None</p>

## Code Examples

This example returns tags of bucket **examplebucket** using **obsClient.getBucketTagging**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketTagInfo;
public class GetBucketTagging001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Obtain bucket tags.
            BucketTagInfo bucketTagInfo = obsClient.getBucketTagging("examplebucket");
            for(BucketTagInfo.TagSet.Tag tag : bucketTagInfo.getTagSet().getTags()){
                System.out.println("\t" + tag.getKey() + ":" + tag.getValue());
            }
            System.out.println("getBucketTagging successfully");
        } catch (ObsException e) {
            System.out.println("getBucketTagging failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
            // Request failed. Print the server-side error code.
            System.out.println("Error Code:" + e.getErrorCode());
            // Request failed. Print the error details.
            System.out.println("Error Message:" + e.getErrorMessage());
            // Request failed. Print the request ID.
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("getBucketTagging failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

## Helpful Links

- [Obtaining Bucket Tags](#)
- [\(GitHub\) Sample Code for Obtaining Bucket Tags](#)
- [OBS Error Codes](#)
- [FAQ for Bucket Tags](#)



## 17.4 Deleting Bucket Tags (SDK for Java)

### Function

If you add tags to a bucket, SDRs generated for the requests sent to this bucket will include these tags, so you can use the tags to classify SDRs for detailed cost analysis. For example, if you have an application that uploads its running data to a bucket, you can tag the bucket with the application name. In this manner, the costs of the application can be analyzed using tags in SDRs.

This API deletes the tags of a bucket.

### Restrictions

- To delete bucket tags, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucketTagging** in IAM or **DeleteBucketTagging** in a bucket policy). For details, see [Introduction to OBS Access Control](#), [IAM Custom Policies](#), and [Creating a Custom Bucket Policy](#).

### Method

obsClient.deleteBucketTagging(final [BaseBucketRequest request](#))

### Request Parameters

Table 17-12 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	<a href="#">BaseBucketRequest</a>	Yes	<b>Explanation:</b> Request parameters related to basic bucket information. For details, see <a href="#">Table 17-13</a> .

**Table 17-13** BaseBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	<p><b>Explanation:</b>                      Bucket name.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>• A bucket name must be unique across all accounts and regions.</li> <li>• A bucket name:                             <ul style="list-style-type: none"> <li>- Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed.</li> <li>- Cannot be formatted as an IP address.</li> <li>- Cannot start or end with a hyphen (-) or period (.).</li> <li>- Cannot contain two consecutive periods (..), for example, <b>my..bucket</b>.</li> <li>- Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, <b>my-.bucket</b> or <b>my.-bucket</b>.</li> </ul> </li> <li>• If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request.</li> </ul> <p><b>Default value:</b>                      None</p>

## Responses

**Table 17-14** Common response headers

Parameter	Type	Description
statusCode	int	<b>Explanation:</b> HTTP status code. <b>Value range:</b> A status code is a group of digits that can be <b>2xx</b> (indicating successes) or <b>4xx</b> or <b>5xx</b> (indicating errors). It indicates the status of a response. For more information, see <a href="#">Status Code</a> . <b>Default value:</b> None
responseHeaders	Map<String, Object>	<b>Explanation:</b> HTTP response header list, composed of tuples. In a tuple, the <b>String</b> key indicates the name of the header, and the <b>Object</b> value indicates the value of the header. <b>Default value:</b> None

## Code Examples

This example deletes tags of bucket **examplebucket** using **ObsClient.deleteBucketTagging**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class DeleteBucketTagging001
{
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk,endPoint);
```

```
// Use the temporary AK/SK pair and security token to initialize the client.
// ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

try {
    // Delete bucket tags.
    obsClient.deleteBucketTagging("examplebucket");
    System.out.println("deleteBucketTagging successfully");
} catch (ObsException e) {
    System.out.println("deleteBucketTagging failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("deleteBucketTagging failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

## Helpful Links

- [Deleting Bucket Tags](#)
- [\(GitHub\) Sample Code for Deleting Bucket Tags](#)
- [OBS Error Codes](#)
- [FAQ for Bucket Tags](#)

# 18 Server-Side Encryption (SDK for Java)

---

## 18.1 Overview (SDK for Java)

OBS supports server-side encryption.

For more information, see [Server-Side Encryption](#).

## 18.2 Server-Side Encryption APIs (SDK for Java)

The following table lists APIs related to server-side encryption:

Method in OBS Java SDK	Description	Supported Encryption Type
ObsClient.putObject	Sets the encryption algorithm and key during object upload to enable server-side encryption.	SSE-KMS SSE-C
ObsClient.getObject	Users with the <b>KMS Administrator</b> permission can directly download objects encrypted using KMS. During a download, the backend decrypts KMS-encrypted objects before returning them. (SSE-KMS) Sets the decryption algorithm and key during object download to decrypt the object. (SSE-C)	SSE-KMS SSE-C

Method in OBS Java SDK	Description	Supported Encryption Type
ObsClient.copyObject	<ol style="list-style-type: none"> <li>1. Sets the decryption algorithm and key for decrypting the source object during object copy.</li> <li>2. Sets the encryption algorithm and key during object copy to enable the encryption algorithm for the target object.</li> </ol>	SSE-KMS SSE-C
ObsClient.getObjectMetadata	Sets the decryption algorithm and key when obtaining the object metadata to decrypt the object.	SSE-C
ObsClient.initiateMultipartUpload	Sets the encryption algorithm and key when initializing a multipart upload to enable server-side encryption for the final object generated.	SSE-KMS SSE-C
ObsClient.uploadPart	Sets the encryption algorithm and key during multipart upload to enable server-side encryption for parts.	SSE-C
ObsClient.copyPart	<ol style="list-style-type: none"> <li>1. Sets the decryption algorithm and key for decrypting the source object during multipart copy.</li> <li>2. Sets the encryption algorithm and key during multipart copy to enable the encryption algorithm for the target part.</li> </ol>	SSE-C

## 18.3 Code Examples for Server-Side Encryption (SDK for Java)

### Code Example: Encrypting (SSE-C) and Uploading an Object

The following code shows an example of encrypting an object with SSE-C before uploading it:

```
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it with
// the one in your actual situation.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Hard-coded or plaintext access keys (AK/SK) are risky. For security purposes, encrypt your access keys
// and store them in the configuration file or environment variables. In this example, access keys are stored in
// the environment variables for identity authentication. Before running the code in this example, configure
// environment variables ACCESS_KEY_ID and SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://
support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
```

```
// Create an ObsClient instance.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);

PutObjectRequest request = new PutObjectRequest();
request.setBucketName("bucketname");
request.setObjectKey("objectname");
request.setFile(new File("localfile"));

HashMap<String, String> userHeaders = new HashMap<>();
userHeaders.put("x-obs-server-side-encryption-customer-algorithm", "AES256");
//The key for encrypting objects when SSE-C is used. Its value is a Base64-encoded 256-bit key.
userHeaders.put("x-obs-server-side-encryption-customer-key", "your-encryption-customer-key");
userHeaders.put("x-obs-server-side-encryption-customer-key-MD5",
    ServiceUtils.toBase64(ServiceUtils.computeMD5Hash(ServiceUtils.fromBase64("your-
encryption-customer-key"))));
request.setUserHeaders(userHeaders);
HeaderResponse response = obsClient.putObject(request);
System.out.println("response:" + response.getRequestId());
```

## Code Example: Decrypting and Downloading an Object

The following code shows an example of downloading an object encrypted with SSE-C:

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.internal.utils.ServiceUtils;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObsObject;
import java.util.HashMap;
import java.util.Map;

public class SseCGetObject{
    public static void main(String[] args) {
        // 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 ACCESS_KEY_ID and
        // SECRET_ACCESS_KEY_ID.
        // Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one in your actual situation.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Create an ObsClient instance and use the permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use the temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);

        try {
            // Call APIs to perform operations, for example, downloading an encrypted object.
            GetObjectRequest request = new GetObjectRequest("bucketname", "objectname");
            // Set the SSE-C decryption algorithm.
            HashMap<String, String> userHeaders = new HashMap<>();
            userHeaders.put("x-obs-server-side-encryption-customer-algorithm", "AES256");
            // The header indicates the key used to encrypt objects in SSE-C mode. The header value is a Base64-
            // encoded 256-bit key.
            userHeaders.put("x-obs-server-side-encryption-customer-key", "your-encryption-customer-key");
            userHeaders.put("x-obs-server-side-encryption-customer-key-MD5",
                ServiceUtils.toBase64(ServiceUtils.computeMD5Hash(ServiceUtils.fromBase64("your-
encryption-customer-key"))));
            request.setUserHeaders(userHeaders);
            ObsObject obsObject = obsClient.getObject(request);
```

```
// You can use other methods to read streams.
System.out.println(obsObject.getObjectContent());
}
catch(ObsException e) {
    System.out.println("putObject failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code:" + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message:" + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
    Map<String, String> headers=e.getResponseHeaders();
    if(headers!=null){
        Check all map entries and print all headers with errors reported.
        for(Map.Entry<String, String> header:headers.entrySet()){
            if(header.getKey().contains("error")){
                System.out.println(header.getKey()+":"+header.getValue());
            }
        }
    }
    e.printStackTrace();
} catch (Exception e) {
    System.out.println("putObject failed");
    // Print other error information.
    e.printStackTrace();
}
}
```

**NOTE**

- For details about the encryption key calculation, see [How Do I Generate an SSE-C Encryption Key?](#)



# 19 Client-Side Encryption (SDK for Java)

---

## 19.1 Overview (SDK for Java)

Client-side encryption is a process where data is encrypted using the selected encryption method and information on your local PC before it is transmitted to an OBS server. During this process, the encryption method used and necessary information required for decryption will be stored in object metadata. During a download, the OBS SDK decrypts the data based on the key provided and the information stored in object metadata, and then returns the decrypted data.

---

### WARNING

- OBS does not store your master key in any way. Keep your master key correct and intact. If your master key is lost or mistakenly used, your data cannot be decrypted.
  - Do not modify the decryption information stored in object metadata when moving or replicating an encrypted object or modifying the object metadata. If you do so, your data cannot be decrypted.
  - For security purposes, later SDK versions will use RSA/ECB/OAEPWITHSHA-256ANDMGF1PADDING in place of RSA for encryption and, therefore, will be incompatible with earlier versions.
  - You are advised to add the SDK version information to **master-key-info** to avoid data encryption or decryption failures caused by changes of encryption algorithms and key length restrictions.
  - Consider both security and performance when determining the RSA key size. Later SDK versions will require the key size be larger than 3,072 bits.
  - Consider both security and performance when configuring **secureRandom**.
  - RSA keys in PKCS #8 format are recommended.
-

## Encryption Process and Cipher Suites

The OBS SDK for Java offers two cipher suite generators: `CTRCipherGenerator` based on AES-CTR, and `CtrRSACipherGenerator` based on RSA and AES-CTR.

If `CTRCipherGenerator` is used to upload objects, you need to provide a data key. The SDK then randomly generates an initial value for each object and uses the data key and initial value to encrypt the object. After the encryption, the SDK uploads the encrypted object to OBS and stores its initial value in object metadata. To download this object, you need to use the same data key used for upload. The SDK automatically obtains the initial value from object metadata, uses the data key provided and initial value to decrypt the object, and returns the decrypted data. If a different data key is provided for download, the SDK returns an unavailable decrypted file.

If `CtrRSACipherGenerator` is used to upload objects, you need to provide an RSA public key. The SDK then randomly generates a data key and initial value for each object and uses them to encrypt the object. After that, the SDK uploads the encrypted object to OBS and then uses the provided RSA key to encrypt the data key. The encrypted data key and initial value are stored in the object metadata. To download this object, you need to provide the corresponding RSA private key. The SDK then automatically obtains the data key and initial value stored in the object metadata and uses the provided RSA private key to decrypt the data key. If the provided private key does not match the public key used for upload, an error will be reported. After the data key is decrypted, the SDK uses the decrypted data key and initial value to decrypt the object and returns the decrypted data.

## API Changes

`CryptoObsClient` is inherited from `ObsClient`. Except the APIs listed in the following table, all other APIs of `CryptoObsClient` are the same as those of `ObsClient`.

**Table 19-1** `CryptoObsClient`

API	<code>CryptoObsClient</code> API Action
<code>putObject</code>	Encrypts streams or files and then upload them to OBS.
<code>getObject</code>	Returns the decrypted data streams.

## Decryption Information in Metadata

The SDK saves the information required for decryption in the user-defined metadata of an object and does not back it up. If you modify the stored information, data cannot be decrypted. The following table describes the information required for decryption.

Table 19-2

Parameter	Mandatory (Yes/No)	Description
encrypted-algorithm	Yes	Information about a cipher suite
encrypted-object-key	Yes when CtrRSACipherGenerator is used	Data key encrypted using an RSA key
encrypted-start	Yes	String of the Base64-encoded initial value used for encryption
master-key-info	No	Information about encryption keys
plaintext-sha256	No	SHA-256 value of the object before being encrypted (not available for streaming uploads)
plaintext-content-length	No	Length of the object before being encrypted (not available for streaming uploads)
encrypted-sha256	No	SHA-256 value of the object after being encrypted (not available for streaming uploads)

## 19.2 Client-Side Encryption APIs (SDK for Java)

### Initializing CryptoCipher

OBS SDK for Java provides two cipher suites for you to choose from.

**CtrRSACipherGenerator** is inherited from **CTRCipherGenerator** but only requires you to provide an RSA public or private key to encrypt or decrypt the randomly generated data key.

**CTRCipherGenerator** requires only one data key. This key is used to encrypt all objects.

**Table 19-3** CtrRSACipherGenerator parameters

Parameter	Type	Mandatory (Yes/No)	Description
privateKey	PrivateKey	Yes when decrypting objects (for example, getObject)	<b>Explanation:</b> RSA private key. <b>Default value:</b> None
publicKey	PublicKey	Yes for encryption (for example, putObject)	<b>Explanation:</b> RSA public key. <b>Default value:</b> None
masterKeyInfo	String	No	<b>Explanation:</b> Key information, which is stored in the user-defined metadata of objects to help you identify keys. You need to maintain the mappings between keys and <b>masterKeyInfo</b> on your own. <b>Default value:</b> None
secureRandom	SecureRandom	Yes	<b>Explanation:</b> Secure random number generator, which is used to randomly generate <b>cryptoKeyBytes</b> and <b>cryptolvBytes</b> . <b>Default value:</b> None

Parameter	Type	Mandatory (Yes/No)	Description
needSha256	boolean	No	<p><b>Explanation:</b></p> <p>Whether to verify the SHA-256 value of the encrypted data and to add SHA-256 values calculated before and after the encryption to the user-defined metadata.</p> <p><b>NOTE</b></p> <p>To reduce memory overheads, the SDK uses streaming computing, which means that a file needs to be read and encrypted twice in a common upload and three times in a resumable upload.</p> <p><b>Value range:</b></p> <p>If <b>need_sha256</b> is set to <b>true</b>, the SDK automatically calculates SHA-256 before and after the object is encrypted and saves the two values to the user-defined metadata of the object. In addition, the SDK adds the SHA-256 value of the encrypted object to the request header when sending a request to the server. After receiving the request, the server calculates the SHA-256 value of the object and checks the consistency between the calculated and the received values. If they are inconsistent, an error message is returned.</p> <p><b>false:</b> The SHA-256 value of the encrypted data is not verified.</p> <p><b>Default value:</b></p> <p><b>false</b></p>

**Table 19-4** CTRCipherGenerator parameters

Parameter	Type	Mandatory (Yes/No)	Description
masterKeyInfo	String	No	<p><b>Explanation:</b> Key information, which is stored in the user-defined metadata of objects to help you identify <b>cryptoKeyBytes</b>. You need to maintain the mappings between <b>cryptoKeyBytes</b> and <b>masterKeyInfo</b> on your own.</p> <p><b>Default value:</b> None</p>
cryptoKeyBytes	byte[]	Yes	<p><b>Explanation:</b> Data key used for encrypting data.</p> <p><b>Restrictions:</b> The value must be 32 bytes long.</p> <p><b>Default value:</b> None</p>
cryptolVBytes	byte[]	No	<p><b>Explanation:</b> Initial value used for encrypting data.</p> <p><b>Restrictions:</b></p> <ul style="list-style-type: none"> <li>The value must be 16 bytes long.</li> <li>If this parameter is specified, all objects are encrypted using the specified initial value. If this parameter is not specified, the SDK randomly generates an initial value for each object.</li> </ul> <p><b>Default value:</b> None</p>
secureRandom	SecureRandom	Yes	<p><b>Explanation:</b> Secure random number generator, for use when either <b>cryptoKeyBytes</b> or <b>cryptolVBytes</b> is missing.</p> <p><b>Default value:</b> None</p>

Parameter	Type	Mandatory (Yes/No)	Description
needSha256	boolean	No	<p><b>Explanation:</b></p> <p>Whether to verify the SHA-256 value of the encrypted data and to add SHA-256 values calculated before and after the encryption to the user-defined metadata.</p> <p><b>NOTE</b></p> <p>To reduce memory overheads, the SDK uses streaming computing, which means that a file needs to be read and encrypted twice in a common upload and three times in a resumable upload.</p> <p><b>Value range:</b></p> <p>If <code>need_sha256</code> is set to <code>true</code>, the SDK automatically calculates SHA-256 before and after the object is encrypted and saves the two values to the user-defined metadata of the object. In addition, the SDK adds the SHA-256 value of the encrypted object to the request header when sending a request to the server. After receiving the request, the server calculates the SHA-256 value of the object and checks the consistency between the calculated and the received values. If they are inconsistent, an error message is returned.</p> <p><b>false:</b> The SHA-256 value of the encrypted data is not verified.</p> <p><b>Default value:</b></p> <p><b>false</b></p>

## Initializing CryptoObsClient

[CryptoObsClient](#) is inherited from [ObsClient](#). For its configuration details, see [Creating and Configuring an OBS Client \(SDK for Java\)](#).

### Method

```
CryptoObsClient(String accessKey, String secretKey, String endPoint,
    CTCipherGenerator ctrCipherGenerator)
```

**Table 19-5** Parameters for initializing CryptoObsClient

Parameter	Description	Recommended Value
accessKey	<p><b>Explanation:</b> Access key ID (AK).</p> <p><b>Default value:</b> An empty string, indicating an anonymous user.</p>	N/A
secretKey	<p><b>Explanation:</b> Secret access key (SK).</p> <p><b>Default value:</b> An empty string, indicating an anonymous user.</p>	N/A
endPoint	<p><b>Explanation:</b> OBS server address. It consists of a protocol type, domain name, and port number, for example, <b>https://your-endpoint:443</b>. For security purposes, you are advised to use HTTPS.</p> <p><b>Default value:</b> None</p>	N/A
ctrCipherGenerator	<p><b>Explanation:</b> Cipher suite used by the client.</p> <p><b>Value range:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">CtrRSACipherGenerator</a></li> <li>• <a href="#">CTRCipherGenerator</a></li> </ul> <p><b>Default value:</b> None</p>	N/A

## APIs That Support Client-Side Encryption

**Table 19-6** APIs that support client-side encryption

Method	Description
putObject	Uploads an object.
getObject	Downloads an object.



## Code Examples

### CtrRSACipherGenerator:

```
import com.obs.services.ObsConfiguration;
import com.obs.services.crypto.CTRCipherGenerator;
import com.obs.services.crypto.CryptoObsClient;
import com.obs.services.crypto.CtrRSACipherGenerator;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObsObject;
import com.obs.services.model.PutObjectResult;

import java.io.File;
import java.io.FileOutputStream;
import java.io.IOException;
import java.io.InputStream;
import java.security.NoSuchAlgorithmException;
import java.security.PrivateKey;
import java.security.PublicKey;
import java.security.spec.InvalidKeySpecException;

public class CtrRSACipherGeneratorDemo001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        // hard coding may result in leakage.
        // Obtain an AK/SK pair on the management console.
        String ak = System.getenv("ACCESS_KEY_ID");
        String sk = System.getenv("SECRET_ACCESS_KEY_ID");
        // (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
        // advised not to use hard coding, which may result in information leakage.
        // Obtain an AK/SK pair and a security token using environment variables or import them in other
        // ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
        // with the one currently in use.
        String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
        CtrRSACipherGenerator ctrRSACipherGenerator = null;
        try {
            String examplePrivateKeyPath = "yourRSAPrivateKeyPath";
            String examplePublicKeyPath = "yourRSAPublicKeyPath";
            ObsConfiguration config = new ObsConfiguration();
            PrivateKey privateKeyObj = CtrRSACipherGenerator.importPKCS8PrivateKey(examplePrivateKeyPath);
            PublicKey publicKeyObj = CtrRSACipherGenerator.importPublicKey(examplePublicKeyPath);
            ctrRSACipherGenerator =
                new CtrRSACipherGenerator(
                    "example_master_key_info", true, config.getSecureRandom(), privateKeyObj,
                    publicKeyObj);
        } catch (IllegalArgumentException | IOException | NoSuchAlgorithmException |
        InvalidKeySpecException e) {
            e.printStackTrace();
        }
        assert ctrRSACipherGenerator != null;
        // Create an ObsClient instance.
        try (CryptoObsClient cryptoObsClient = new CryptoObsClient(ak, sk, securityToken, endPoint,
        ctrRSACipherGenerator)) {
            String exampleBucketName = "example-bucket";
            String exampleObjectKey = "exampleObjectKey";
            String examplePlainTextFilePath = "examplePlainTextFilePath";
            String exampleDecryptedFilePath = "exampleDecryptedFilePath";
            PutObjectResult putObjectResult =
                cryptoObsClient.putObject(exampleBucketName, exampleObjectKey, new
        File(examplePlainTextFilePath));
            System.out.println("HTTP Code: " + putObjectResult.getStatusCode());
            System.out.println("Etag: " + putObjectResult.getEtag());
            // The object is successfully encrypted on the client and then uploaded.
            System.out.println("CtrRSACipherGeneratorDemo001 putObject successfully");
        }
    }
}
```

```
        GetObjectRequest getObjectRequest = new GetObjectRequest(exampleBucketName,
exampleObjectKey);
        ObsObject obsObject = cryptoObsClient.getObject(getObjectRequest);
        InputStream input = obsObject.getObjectContent();
        byte[] b = new byte[1024];
        FileOutputStream fileOutputStream = new FileOutputStream(exampleDecryptedFilePath);
        int len;
        while ((len = input.read(b)) != -1) {
            fileOutputStream.write(b, 0, len);
        }
        fileOutputStream.close();
        input.close();

        System.out.println("HTTP Code: " + obsObject.getMetadata().getStatusCode());
        // The object is successfully decrypted on the client and then downloaded.
        System.out.println("CtrRSACipherGeneratorDemo001 getObject successfully");

        // Check whether the file remains the same before encryption and after decryption.
        byte[] plainTextFileSha256 = CTCipherGenerator.getFileSha256Bytes(examplePlainTextFilePath);
        byte[] decryptedFileSha256 = CTCipherGenerator.getFileSha256Bytes(exampleDecryptedFilePath);
        String plainTextFileSha256Base64Encoded =
CTRcipHerGenerator.getBase64Info(plainTextFileSha256);
        String decryptedFileSha256Base64Encoded =
CTRcipHerGenerator.getBase64Info(decryptedFileSha256);
        System.out.println("plainTextFileSha256 base64 encoded: " + plainTextFileSha256Base64Encoded);
        System.out.println("decryptedFileSha256 base64 encoded: " + decryptedFileSha256Base64Encoded);
        System.out.println(
            "plainTextFileSha256 equals decryptedFileSha256 ? "
                + decryptedFileSha256Base64Encoded.equals(plainTextFileSha256Base64Encoded));
        System.out.println("CtrRSACipherGeneratorDemo001 successfully");
    } catch (ObsException e) {
        System.out.println("CtrRSACipherGeneratorDemo001 failed");
        // Request failed. Print the HTTP status code.
        System.out.println("HTTP Code: " + e.getResponseCode());
        // Request failed. Print the server-side error code.
        System.out.println("Error Code: " + e.getErrorCode());
        // Request failed. Print the error details.
        System.out.println("Error Message: " + e.getErrorMessage());
        // Request failed. Print the request ID.
        System.out.println("Request ID: " + e.getErrorRequestId());
        System.out.println("Host ID: " + e.getErrorHostId());
    } catch (Exception e) {
        System.out.println("CtrRSACipherGeneratorDemo001 putObject failed");
        // Print other error details.
        e.printStackTrace();
    }
}
}
```

### CTRCipherGenerator:

```
import com.obs.services.crypto.CTRCipherGenerator;
import com.obs.services.crypto.CryptoObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.GetObjectRequest;
import com.obs.services.model.ObsObject;
import com.obs.services.model.PutObjectResult;

import java.io.File;
import java.io.FileOutputStream;
import java.io.InputStream;
import java.security.NoSuchAlgorithmException;
import java.security.SecureRandom;

public class CTCipherGeneratorDemo001 {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import the AK/SK pair in other ways. Using
        hard coding may result in leakage.
    }
}
```

```
// Obtain an AK/SK pair on the management console.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// (Optional) If you are using a temporary AK/SK pair and a security token to access OBS, you are
advised not to use hard coding, which may result in information leakage.
// Obtain an AK/SK pair and a security token using environment variables or import them in other
ways.
// String securityToken = System.getenv("SECURITY_TOKEN");
// Enter the endpoint corresponding to the bucket. EU-Dublin is used here as an example. Replace it
with the one currently in use.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Obtain an endpoint using environment variables or import it in other ways.
//String endPoint = System.getenv("ENDPOINT");
CTRCipherGenerator ctrCipherGenerator = null;
try {
    SecureRandom secureRandom = SecureRandom.getInstanceStrong();
    // Note that in Linux, using SecureRandom.getInstanceStrong() may block the thread in case of
insufficient system entropy. In this case, you are advised to either use entropy addition methods or set
SecureRandom in another way.
    byte[] exampleMasterKey = new byte[CTRCipherGenerator.CRYPTO_KEY_BYTES_LEN];
    secureRandom.nextBytes(exampleMasterKey);
    // Replace exampleMasterKey with the one you actually use. Make sure the key is 32 bytes and
keep it properly.
    ctrCipherGenerator =
        new CTRCipherGenerator("example_master_key_info", exampleMasterKey, true,
secureRandom);
} catch (IllegalArgumentException | NoSuchAlgorithmException e) {
    e.printStackTrace();
}
assert ctrCipherGenerator != null;
// Create an ObsClient instance.
try (CryptoObsClient cryptoObsClient =
    new CryptoObsClient(ak, sk, securityToken, endPoint, ctrCipherGenerator)) {
    String exampleBucketName = "example-bucket";
    String exampleObjectKey = "exampleObjectKey";
    String examplePlainTextFilePath = "examplePlainTextFilePath";
    String exampleDecryptedFilePath = "exampleDecryptedFilePath";
    PutObjectResult putObjectResult =
        cryptoObsClient.putObject(exampleBucketName, exampleObjectKey, new
File(examplePlainTextFilePath));
    System.out.println("HTTP Code: " + putObjectResult.getStatusCode());
    System.out.println("Etag: " + putObjectResult.getEtag());
    // The object is successfully encrypted on the client and then uploaded.
    System.out.println("CTRCipherGeneratorDemo001 putObject successfully");

    GetObjectRequest getObjectRequest = new GetObjectRequest(exampleBucketName,
exampleObjectKey);
    ObsObject obsObject = cryptoObsClient.getObject(getObjectRequest);
    InputStream input = obsObject.getObjectContent();
    byte[] b = new byte[1024];
    FileOutputStream fileOutputStream = new FileOutputStream(exampleDecryptedFilePath);
    int len;
    while ((len = input.read(b)) != -1) {
        fileOutputStream.write(b, 0, len);
    }
    fileOutputStream.close();
    input.close();

    System.out.println("HTTP Code: " + obsObject.getMetadata().getStatusCode());
    // The object is successfully decrypted on the client and then downloaded.
    System.out.println("CTRCipherGeneratorDemo001 getObject successfully");

    // Check whether the file remains the same before encryption and after decryption.
    byte[] plainTextFileSha256 = CTRCipherGenerator.getFileSha256Bytes(examplePlainTextFilePath);
    byte[] decryptedFileSha256 = CTRCipherGenerator.getFileSha256Bytes(exampleDecryptedFilePath);
    String plainTextFileSha256Base64Encoded =
CTRCipherGenerator.getBase64Info(plainTextFileSha256);
    String decryptedFileSha256Base64Encoded =
CTRCipherGenerator.getBase64Info(decryptedFileSha256);
```

```
System.out.println("plainTextFileSha256 base64 encoded: " + plainTextFileSha256Base64Encoded);
System.out.println("decryptedFileSha256 base64 encoded: " + decryptedFileSha256Base64Encoded);
System.out.println(
    "plainTextFileSha256 equals decryptedFileSha256 ? "
    + decryptedFileSha256Base64Encoded.equals(plainTextFileSha256Base64Encoded));
System.out.println("CTRCipherGeneratorDemo001 successfully");
} catch (ObsException e) {
    System.out.println("CTRCipherGeneratorDemo001 failed");
    // Request failed. Print the HTTP status code.
    System.out.println("HTTP Code: " + e.getResponseCode());
    // Request failed. Print the server-side error code.
    System.out.println("Error Code:" + e.getErrorCode());
    // Request failed. Print the error details.
    System.out.println("Error Message: " + e.getErrorMessage());
    // Request failed. Print the request ID.
    System.out.println("Request ID:" + e.getErrorRequestId());
    System.out.println("Host ID:" + e.getErrorHostId());
} catch (Exception e) {
    System.out.println("CTRCipherGeneratorDemo001 putObject failed");
    // Print other error details.
    e.printStackTrace();
}
}
```

# 20 Fault Locating (SDK for Java)

## 20.1 Methods (SDK for Java)

If problems occur when using the OBS Java SDK, you can perform the following steps to analyze and locate the problems.

- Step 1** Make sure that [the latest version of OBS Java SDK](#) of OBS Java SDK is used.
- Step 2** Make sure that the logging function of OBS Java SDK is enabled. For details about how to enable the function, see the [Log Analysis](#) section. The recommended log level is WARN.
- Step 3** Make sure that the program code of the OBS Java SDK complies with [Using an OBS Client](#). All call exceptions of ObsClient APIs are processed as required. The following is a code example of uploading an object:

```
ObsClient obsClient = null;
try
{
    String endPoint = "https://your-endpoint";
    // Hard-coded or plaintext AK/SK are risky. For security purposes, encrypt your AK/SK and store them in
    the configuration file or environment variables. In this example, the AK/SK are stored in environment
    variables for identity authentication. Before running this example, configure environment variables
    ACCESS_KEY_ID and SECRET_ACCESS_KEY_ID.
    // Obtain an AK/SK pair on the management console. For details, see https://
support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
    String ak = System.getenv("ACCESS_KEY_ID");
    String sk = System.getenv("SECRET_ACCESS_KEY_ID");

    obsClient = new ObsClient(ak, sk, endPoint);
    HeaderResponse response = obsClient.putObject("bucketname", "objectname", new
ByteArrayInputStream("Hello OBS".getBytes()));
    // (Optional) If a call is successful, record the HTTP status code and request ID returned by the server.
    System.out.println(response.getStatusCode());
    System.out.println(response.getRequestId());
}
catch (ObsException e)
{
    // Recommended: When an exception occurs, record the HTTP status code, server-side error code, and
    request ID returned by the server.
    System.out.println("HTTP Code: " + e.getResponseCode());
    System.out.println("Error Code:" + e.getErrorCode());
    System.out.println("Request ID:" + e.getErrorRequestId());
    // Recommended: When an exception occurs, record the stack information.
    e.printStackTrace(System.out);
}
```

 NOTE

You can click [here](#) to view the details about **ObsException**.

- Step 4** If an exception occurs when an ObsClient API is called, obtain the **HTTP status code** and **OBS server-side error code** from **ObsException** or log file, and compare them to locate the exception cause.
- Step 5** If the exception cause cannot be found in step 4, obtain the request ID returned by the OBS server from **ObsException** or log file and contact the OBS server O&M team to locate the cause.
- Step 6** If the request ID is unable to be obtained, collect the stack information of **ObsException** and contact the OBS client O&M team to locate the cause.

----End

## 20.2 Resolving Dependency Missing or Conflicts (SDK for Java)

Dependency missing and dependency conflict are commonly encountered in Java development or during SDK integration. If error message "ClassNotFoundException" or "NoClassDefFoundError" is reported during application compilation and running, check whether this is a dependency-triggered problem. If yes, perform the following steps to locate and rectify the fault.

### Dependency Missing

The following table lists the third-party components (including their versions) that the latest SDK depends on.

Dependency	Version	Description
okhttp	4.11.0	Used to send HTTP requests.
okio	3.5.0	Component of OkHttp
java-xmlbuilder	1.3	Used to construct and parse XML files.
jackson-core	2.13.3	Used to construct and parse JSON files.
jackson-databind	2.15.0	Component of jackson-core
jackson-annotations	2.13.3	Component of jackson-core

### Dependency Conflict

If your project has multiple versions of OBS Java SDK packages or third-party dependencies, dependency conflicts may occur. If there are SDKs of earlier

versions, delete them and use the latest version. If there are multiple versions of third-party dependencies, replace the conflict ones with the versions required by the SDK.

## 20.3 Other Notable Issues (SDK for Java)

### SignatureDoesNotMatch

HTTP Code: 403  
Error Code: SignatureDoesNotMatch

Possible causes are as follows:

1. The SK input into ObsClient initialization is incorrect. Solution: Make sure that the SK is correct.
2. This problem is caused by a bug in the OBS Java SDK of an earlier version. Solution: Upgrade the SDK to the latest version.
3. OBS Java SDK 2.1.x versions are incompatible with the dependent library Apache HttpClient. Solution: Use httpcore-4.4.4 and httpclient-4.5.3.

### MethodNotAllowed

HTTP Code: 405  
Error Code: MethodNotAllowed

This error occurs because a feature on which the ObsClient API depends has not been rolled out on the requested OBS server. Contact the OBS O&M team for further confirmation.

### BucketAlreadyOwnedByYou

HTTP Code: 409  
Error Code: BucketAlreadyOwnedByYou

In OBS, a bucket name must be globally unique. Solution: If this error occurs when the **ObsClient.createBucket** is called, check whether the bucket exists. You can use either of the following methods to check whether a bucket exists:

Method 1 (recommended): Call **ObsClient.listBuckets** to query the list of all buckets that you own and check whether the bucket exists.

Method 2: Call **ObsClient.headBucket** to check whether the bucket exists.

#### NOTE

**ObsClient.headBucket** can query only buckets in the current region, while **ObsClient.listBuckets** can query buckets in all regions.

### BucketAlreadyExists

HTTP Code: 409  
Error Code: BucketAlreadyExists

In OBS, a bucket name must be globally unique. Solution: If this error occurs when **ObsClient.createBucket** is called, it indicates that the bucket has been created by another user. Use a different bucket name and try again.

## Connection Timeout

```
HTTP Code: 408
Caused by: java.net.ConnectException: Connection timed out: connect
    at java.net.DualStackPlainSocketImpl.waitForConnect(Native Method)
    at java.net.DualStackPlainSocketImpl.socketConnect(DualStackPlainSocketImpl.java:85)
```

Possible causes are as follows:

1. The endpoint input during ObsClient initialization is incorrect. Solution: Make sure that the endpoint is correct.
2. The network between the OBS client and OBS server is abnormal. Solution: Check the health status of the network.
3. The OBS domain name resolved by DNS is inaccessible. Solution: Contact the OBS O&M team.

## Read/Write Timeout

```
HTTP Code: 408
Error Code:RequestTimeOut
Caused by: java.net.SocketTimeoutException: timeout
    at okio.Okio$4.newTimeoutException(Okio.java:232)
    at okio.AsyncTimeout.exit(AsyncTimeout.java:285)
    at okio.AsyncTimeout$2.read(AsyncTimeout.java:241)
```

Possible causes are as follows:

1. The network latency between the OBS client and OBS server is too long. Solution: Check the health status of the network.
2. The network between the OBS client and OBS server is abnormal. Solution: Check the health status of the network.

## Abnormal Returned Value -1

```
HTTP Code: -1
```

Possible causes are as follows:

1. The OBS Java SDK of an earlier version is used and a connection timeout or read/write timeout occurs. Solution: See the solutions for [connection timeout](#) and [read/write timeout](#).
2. This is a bug in earlier versions of OBS Java SDK. Solution: Use [the latest version of Java SDK](#).
3. The server returns an exception. Solution: Obtain the request ID returned by OBS server from the log and contact the OBS O&M team.

## Unable to Obtain Error Codes from ObsException

Possible causes are as follows:

1. An error is reported when **ObsClient.getBucketMetadata** or **ObsClient.getObjectMetadata** is called. In this scenario, the server does not return an error code because the request method used in the background is HEAD. Solution: Call **ObsException.getResponseCode** to obtain the HTTP status code to analyze the possible cause. For example, 403 indicates that the user does not have the access permission, and 404 indicates that the bucket or object does not exist. If the cause cannot be located, obtain the request ID



returned by the OBS server from **ObsException** and contact the OBS O&M team.

2. The endpoint passed during ObsClient initialization cannot correspond to a valid IP address of the OBS server after DNS resolution. Solution: Check whether the endpoint is correct. If the endpoint is correct, contact the OBS O&M team.

## UnknownHostException

```
Caused by: java.net.UnknownHostException: bucketname.unknowndomain.com
    at java.net.Inet6AddressImpl.lookupAllHostAddr(Native Method)
    at java.net.InetAddress$1.lookupAllHostAddr(InetAddress.java:901)
    at java.net.InetAddress.getAddressesFromNameService(InetAddress.java:1293)
```

Possible causes are as follows:

1. The endpoint input during ObsClient initialization is incorrect. Solution: Make sure that the endpoint is correct.
2. DNS cannot resolve the OBS domain name. Solution: Contact the OBS O&M team.

## NullPointerException

```
Exception in thread "main" java.lang.NullPointerException
    at com.obs.services.internal.RestStorageService.isCname(RestStorageService.java:1213)
    at com.obs.services.ObsClient.doActionWithResult(ObsClient.java:2805)
```

Possible causes are as follows:

1. **ObsClient.close** is called to close ObsClient and then another ObsClient API is called. Solution: Call **ObsClient.close** to release resources only before exiting the application.
2. This is a bug in earlier versions of OBS Java SDK. Solution: Use [the latest version of Java SDK](#).

## Connection Leakage

```
A connection to xxx was leaked. Did you forget to close a response body?
```

This error occurs when **ObsClient.getObject** is not properly closed after it is called to obtain the data flow of the object to be downloaded. To fix this error, call the **ObsObject.getObjectContent.close** method in the **finally** statement block to close the connection.

## OkHttp Error After an SDK Upgrade

```
Exception in thread "main" java.lang.NoSuchMethodError: 'okhttp3.RequestBody
okhttp3.RequestBody.create(java.lang.String, okhttp3.MediaType)'
    at com.obs.services.internal.RestConnectionService.createRequestBuilder(RestConnectionService.java:157)
    at com.obs.services.internal.RestConnectionService.setupConnection(RestConnectionService.java:148)
    at com.obs.services.internal.RestConnectionService.setupConnection(RestConnectionService.java:124)
    at com.obs.services.internal.RestStorageService.performRequest(RestStorageService.java:395)
    at com.obs.services.internal.RestStorageService.performRequest(RestStorageService.java:388)
```

This error occurs because OkHttp of an earlier version was used after the SDK upgrade. To resolve this issue, upgrade OkHttp to a required version by referring to [Resolving Dependency Missing or Conflicts \(SDK for Java\)](#).

## StackOverflowError After an SDK Upgrade

```
Caused by: java.lang.StackOverflowError
  at sun.misc.URLClassPath.getResource(URLClassPath.java:211) ~[?:1.8.0_91]
  at java.net.URLClassLoader$1.run(URLClassLoader.java:365) ~[?:1.8.0_91]
  at java.net.URLClassLoader$1.run(URLClassLoader.java:362) ~[?:1.8.0_91]
  at java.security.AccessController.doPrivileged(Native Method) ~[?:1.8.0_91]
  at java.net.URLClassLoader.findClass(URLClassLoader.java:361) ~[?:1.8.0_91]
  at java.lang.ClassLoader.loadClass(ClassLoader.java:424) ~[?:1.8.0_91]
  at java.lang.ClassLoader.loadClass(ClassLoader.java:357) ~[?:1.8.0_91]
  at org.apache.catalina.loader.WebappClassLoaderBase.loadClass(WebappClassLoaderBase.java:1806)
```

Check the JVM parameter **xss** and set it to **1 MB**. **xss** indicates the memory size allocated to each thread started by the JVM. By default, the value of **xss** is 256 KB for JDK 1.4 and 1 MB for JDK 1.5 or later.

## SSL peer shut down incorrectly

```
javax.net.ssl.SSLException: SSL peer shut down incorrectly
  at sun.security.ssl.InputRecord.readV3Record(InputRecord.java:596)
  at sun.security.ssl.InputRecord.read(InputRecord.java:532)
  at sun.security.ssl.SSLSocketImpl.readRecord(SSLSocketImpl.java:975)
  at sun.security.ssl.SSLSocketImpl.readDataRecord(SSLSocketImpl.java:933)
  at sun.security.ssl.AppInputStream.read(AppInputStream.java:105)
  at obs.shaded.okio.Okio$2.read(Okio.java:140)
  at obs.shaded.okio.AsyncTimeout$2.read(AsyncTimeout.java:237)
  at obs.shaded.okio.RealBufferedSource.read(RealBufferedSource.java:51)
  at obs.shaded.okhttp3.internal.http1.Http1ExchangeCodec
$AbstractSource.read(Http1ExchangeCodec.java:389)
  at obs.shaded.okhttp3.internal.http1.Http1ExchangeCodec
$FixedLengthSource.read(Http1ExchangeCodec.java:427)
  at obs.shaded.okhttp3.internal.connection.Exchange$ResponseBodySource.read(Exchange.java:286)
  at obs.shaded.okio.RealBufferedSource$1.read(RealBufferedSource.java:447)
  at java.util.zip.InflaterInputStream.fill(InflaterInputStream.java:238)
  at java.util.zip.InflaterInputStream.read(InflaterInputStream.java:158)
  at java.util.zip.GZIPInputStream.read(GZIPInputStream.java:117)
  at sun.nio.cs.StreamDecoder.readBytes(StreamDecoder.java:284)
  at sun.nio.cs.StreamDecoder.implRead(StreamDecoder.java:326)
  at sun.nio.cs.StreamDecoder.read(StreamDecoder.java:178)
  at java.io.InputStreamReader.read(InputStreamReader.java:184)
  at java.io.BufferedReader.fill(BufferedReader.java:161)
  at java.io.BufferedReader.readLine(BufferedReader.java:324)
  at java.io.BufferedReader.readLine(BufferedReader.java:389)
```

Do not read file streams by line during a download on the client. For details, see the demo for [a streaming download](#).

## Others

For details, see [FAQs](#).

# 21 Troubleshooting (SDK for Java)

---

## 21.1 HTTP Status Codes (SDK for Java)

The OBS server complies with the HTTP standard. After an API is called, the OBS server returns a standard HTTP status code. The following tables list the categories of HTTP status codes and the common HTTP status codes in OBS.

- Categories of HTTP status codes

Category	Description
1XX	Informational response. A request is received by the server and the server requires the requester to continue the operation. This category is usually invisible to the client.
2XX	Success. The operation is received and processed successfully.
3XX	Redirection. Further operations to complete the request are required. This category is usually invisible to the client.
4XX	Client errors. The request contains a syntax error, or the request cannot be implemented.
5XX	Server errors. There is an error when the server is processing a request.

- Common HTTP status codes in OBS and their meanings

HTTP Status Code	Description	Possible Cause
400 Bad Request	The request parameter is incorrect.	<ul style="list-style-type: none"> <li>Invalid request parameter.</li> <li>The consistency check fails after the client request carries MD5.</li> <li>An invalid parameter is transferred when the SDK is used.</li> <li>An invalid bucket name is used.</li> </ul>
403 Forbidden	The access is denied.	<ul style="list-style-type: none"> <li>The signature carried in the request header does not match with the signature calculated by the OBS server. Generally, the error is caused by incorrect AK/SK.</li> <li>The account does not have the permission to access the requested resource.</li> <li>The account is in arrears.</li> <li>The bucket space is insufficient when a quota is set for the bucket.</li> <li>Invalid AK</li> <li>The time difference between the client and the server is too large (the time on the machine where the client is located is not in sync with the time on the NTP server).</li> </ul>
404 Not Found	The requested resource does not exist.	<ul style="list-style-type: none"> <li>The bucket does not exist.</li> <li>The object does not exist.</li> <li>The bucket policy configuration does not exist. For example, the bucket CORS configuration or bucket policy configuration does not exist.</li> <li>The multipart upload does not exist.</li> </ul>
405 Method Not Allowed	The request method is not supported.	The requested method or feature is not supported in the region where the bucket is located.

HTTP Status Code	Description	Possible Cause
408 Request Timeout	Request timed out.	The Socket connection between the server and client times out.
409 Conflict	Request conflicts occur.	<ul style="list-style-type: none"> <li>• Buckets of the same name are created in different regions.</li> <li>• The bucket to delete is not empty.</li> </ul>
500 Internal Server Error	An internal error occurs on the server side.	An internal error occurs on the server side.
503 Service Unavailable	The service is unavailable.	The server is inaccessible temporarily.

## 21.2 OBS Server-side Error Codes (SDK for Java)

If the OBS server encounters an error when processing a request, a response containing the error code and error description is returned. The following table lists details about each error code and HTTP status code.

HTTP Status Code	Error Code	Error Message	Solution
301 Moved Permanently	PermanentRedirect	The requested bucket can be accessed only through the specified address. Send subsequent requests to the address.	Send the request to the returned redirection address.
301 Moved Permanently	WebsiteRedirect	The website request lacks <b>bucketName</b> .	Put the bucket name in the request and try again.
307 Moved Temporarily	TemporaryRedirect	Temporary redirection. If the DNS is updated, the request is redirected to the bucket.	The system automatically redirects the request or sends the request to the redirection address.

HTTP Status Code	Error Code	Error Message	Solution
400 Bad Request	BadDigest	The specified value of <b>Content-MD5</b> does not match the value received by OBS.	Check whether the MD5 value carried in the header is the same as that calculated by the message body.
400 Bad Request	BadDomainName	Invalid domain name.	Use a valid domain name.
400 Bad Request	BadRequest	Invalid request parameter.	Modify the parameter according to the error details returned in the message body.
400 Bad Request	CustomDomainAlreadyExist	The configured domain already exists.	It has been configured and does not need to be configured again.
400 Bad Request	CustomDomainNotExist	The domain to be deleted does not exist.	The domain is not configured or has been deleted. You do not need to delete it.
400 Bad Request	EntityTooLarge	The size of the object uploaded using the POST method exceeds the upper limit.	Modify the conditions specified in the policy when posting the object or reduce the object size.
400 Bad Request	EntityTooSmall	The size of the object uploaded using the POST method does not reach the lower limit.	Modify the conditions specified in the policy when posting the object or increase the object size.

HTTP Status Code	Error Code	Error Message	Solution
400 Bad Request	IllegalLocation-ConstraintException	A request without <b>Location</b> is sent for creating a bucket in a non-default region.	Send the bucket creation request to the default region, or send the request with the <b>Location</b> of the non-default region.
400 Bad Request	IncompleteBody	No complete request body is received due to network or other problems.	Upload the object again.
400 Bad Request	IncorrectNumberOfFilesInPostRequest	Each POST request must contain one file to be uploaded.	Carry a file to be uploaded.
400 Bad Request	InvalidArgument	Invalid parameter.	Modify the parameter according to the error details in the message body.
400 Bad Request	InvalidBucket	The bucket to be accessed does not exist.	Try another bucket name.
400 Bad Request	InvalidBucketName	The bucket name specified in the request is invalid, which may have exceeded the maximum length, or contain special characters that are not allowed.	Try another bucket name.
400 Bad Request	InvalidEncryptionAlgorithmError	Incorrect encryption algorithm. The object cannot be decrypted due to incorrect encryption header carried when downloading the SSE-C encrypted object.	Carry the correct encryption header when downloading the object.

HTTP Status Code	Error Code	Error Message	Solution
400 Bad Request	InvalidLocation-Constraint	The specified <b>Location</b> in the bucket creation request is invalid or does not exist.	Correct the <b>Location</b> in the bucket creation request.
400 Bad Request	InvalidPart	One or more specified parts are not found. The parts may not be uploaded or the specified entity tags (ETags) do not match the parts' ETags.	Merge the parts correctly according to the ETags.
400 Bad Request	InvalidPartOrder	Parts are not listed in ascending order by part number.	Sort the parts in ascending order and merge them again.
400 Bad Request	InvalidPolicyDocument	The content of the form does not meet the conditions specified in the policy document.	Modify the policy in the constructed form according to the error details in the message body and try again.
400 Bad Request	InvalidRedirectLocation	Invalid redirect location.	Specify the correct IP address.
400 Bad Request	InvalidRequest	Invalid request.	Modify the parameter according to the error details returned in the message body.
400 Bad Request	InvalidRequestBody	The request body is invalid. The request requires a message body but no message body is uploaded.	Upload the message body in the correct format.
400 Bad Request	InvalidTargetBucketForLogging	The delivery group has no ACL permission for the target bucket.	Configure the target bucket ACL and try again.



HTTP Status Code	Error Code	Error Message	Solution
400 Bad Request	KeyTooLongError	The provided key is too long.	Use a shorter key.
400 Bad Request	KMS.DisabledException	The master key is disabled in server-side encryption with KMS-managed keys (SSE-KMS) mode.	Replace the key and try again, or contact with the technical support.
400 Bad Request	KMS.NotFoundException	The master key does not exist in SSE-KMS mode.	Retry with the correct master key.
400 Bad Request	MalformedACLError	The XML file you provided was not well-formed or did not validate against our format requirements.	Use the correct XML format to retry.
400 Bad Request	MalformedError	The XML format in the request is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedLoggingStatus	The XML format of <b>Logging</b> is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedPolicy	The bucket policy failed the check.	Modify the bucket policy according to the error details returned in the message body.
400 Bad Request	MalformedQuotaError	The Quota XML format is incorrect.	Use the correct XML format to retry.
400 Bad Request	MalformedXML	An XML file of a configuration item is in incorrect format.	Use the correct XML format to retry.
400 Bad Request	MaxMessageLengthExceeded	Copying an object does not require a message body in the request.	Remove the message body and retry.

HTTP Status Code	Error Code	Error Message	Solution
400 Bad Request	MetadataTooLarge	The size of the metadata header has exceeded the upper limit.	Reduce the size of the metadata header.
400 Bad Request	MissingRegion	No region contained in the request and no default region defined in the system.	Carry the region information in the request.
400 Bad Request	MissingRequestBodyError	An empty XML file is sent as a request.	Provide the correct XML file.
400 Bad Request	MissingRequired-Header	A required header is missing in the request.	Provide the required header.
400 Bad Request	MissingSecurity-Header	A required header is missing in the request.	Provide the required header.
400 Bad Request	TooManyBuckets	You have attempted to create more buckets than allowed.	Delete some buckets and try again.
400 Bad Request	TooManyCustomDomains	Too many user accounts are configured.	Delete some user accounts and try again.
400 Bad Request	TooManyWrongSignatures	The request is rejected due to high-frequency errors.	Replace AK and try again.
400 Bad Request	UnexpectedContent	The request requires a message body which is not carried by the client, or the request does not require a message body but the client carries the message body.	Try again according to the instruction.

HTTP Status Code	Error Code	Error Message	Solution
400 Bad Request	AZRedundancyTypeNotSupported	The current region does not support buckets with this AZ redundancy.	Choose a type of AZ redundancy supported in the region.
400 Bad Request	UserKeyMustBeSpecified	This operation is only available to special users.	Contact the technical support.
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	AccessForbidden	Insufficient permission. No CORS rule is configured for the bucket or the CORS rule does not match.	Modify the CORS configuration of the bucket or send the matched OPTIONS request based on the CORS configuration of the bucket.
403 Forbidden	AllAccessDisabled	You have no permission to perform the operation. The bucket name is forbidden.	Change the bucket name.
403 Forbidden	DeregisterUserId	The user has been deregistered.	Top up or re-register.
403 Forbidden	InArrearOrInsufficientBalance	The subscriber owes fees or the account balance is insufficient, and the subscriber does not have the permission to perform an operation.	Top up the account.
403 Forbidden	InsufficientStorageSpace	Insufficient storage space.	If the quota is exceeded, increase quota or delete some objects.

HTTP Status Code	Error Code	Error Message	Solution
403 Forbidden	InvalidAccessKeyId	The access key ID provided by the customer does not exist in the system.	Provide a correct access key ID.
403 Forbidden	NotSignedUp	You have not registered with the system.	Register OBS.
403 Forbidden	RequestTimeTooSkewed	The request time and the server's time differ a lot.	Check whether the difference between the client time and the current time is too large.
403 Forbidden	SignatureDoesNotMatch	The provided signature in the request does not match the signature calculated by OBS.	Check your secret access key and signature calculation method.
403 Forbidden	Unauthorized	You have not been authenticated in real name.	Authenticate your real name and try again.
404 Not Found	NoSuchBucket	The specified bucket does not exist.	Create a bucket and perform the operation again.
404 Not Found	NoSuchBucketPolicy	No bucket policy exists.	Configure a bucket policy.
404 Not Found	NoSuchCORSConfiguration	No CORS configuration exists.	Configure CORS first.
404 Not Found	NoSuchCustomDomain	The requested user domain does not exist.	Set a user domain first.
404 Not Found	NoSuchKey	The specified key does not exist.	Upload the object first.
404 Not Found	NoSuchLifecycleConfiguration	The requested lifecycle rule does not exist.	Configure a lifecycle rule first.

HTTP Status Code	Error Code	Error Message	Solution
404 Not Found	NoSuchUpload	The specified multipart upload does not exist. The upload ID does not exist or the multipart upload job has been aborted or completed.	Use the existing part or reinitialize the part.
404 Not Found	NoSuchVersion	The specified version ID does not match any existing version.	Use a correct version ID.
404 Not Found	NoSuchWebsiteConfiguration	The requested website does not exist.	Configure the website first.
405 Method Not Allowed	MethodNotAllowed	The specified method is not allowed against the requested resource. The message "Specified method is not supported." is returned.	The method is not allowed.
408 Request Timeout	RequestTimeout	No read or write operation has been performed within the timeout period of the socket connection between the user and the server.	Check the network and try again, or contact technical support.
409 Conflict	BucketAlreadyExists	The requested bucket name already exists. The bucket namespace is shared by all users of OBS. Select another name and retry.	Try another bucket name.

HTTP Status Code	Error Code	Error Message	Solution
409 Conflict	BucketAlreadyOwnedByYou	Your previous request for creating the named bucket succeeded and you already own it.	You do not need to create the bucket again.
409 Conflict	BucketNotEmpty	The bucket that you tried to delete is not empty.	Delete the objects in the bucket and then delete the bucket.
409 Conflict	FsObjectConflict	File upload or creation failed.	Check the file creation rule. For example, check whether you are overwriting files when overwrite is not allowed, or whether you are uploading a file to a file (taking this file as a directory) under POSIX semantics.
409 Conflict	InvalidBucketState	Invalid bucket status. After cross-region replication is configured, bucket versioning cannot be disabled.	Enable bucket versioning or cancel cross-region replication.
409 Conflict	OperationAborted	A conflicting operation is being performed on this resource. Retry later.	Try again later.
409 Conflict	ServiceNotSupported	The request method is not supported by the server.	Not supported by the server. Contact technical support.
411 Length Required	MissingContentLength	The HTTP header Content-Length is not provided.	Provide the Content-Length header.

HTTP Status Code	Error Code	Error Message	Solution
412 Precondition Failed	PreconditionFailed	At least one of the specified preconditions is not met.	Modify according to the condition prompt in the returned message body.
416 Client Requested Range Not Satisfiable	InvalidRange	The requested range cannot be obtained.	Retry with the correct range.
500 Internal Server Error	InternalServerError	An internal error occurs. Retry later.	Contact the technical support.
501 Not Implemented	ServiceNotImplemented	The request method is not implemented by the server.	Not supported currently. Contact the technical support.
503 Service Unavailable	ServiceUnavailable	The server is overloaded or has internal errors.	Try again later or contact the technical support.
503 Service Unavailable	SlowDown	Too frequent requests. Reduce your request frequency.	Reduce your request frequency.

## 21.3 SDK Exceptions (SDK for Java)

SDK custom exceptions (**ObsException**), thrown by **ObsClient**, are inherited from class **java.lang.RuntimeException**. Exceptions are usually OBS server errors, including **OBS error codes** and error information. This facilitates users to locate problems and troubleshoot faults.

**ObsException** contains the following error information:

- **ObsException.getResponseCode**: HTTP status code
- **ObsException.getErrorCode**: Error code returned by the OBS server
- **ObsException.getErrorMessage**: Error description returned by the OBS server
- **ObsException.getErrorRequestId**: Request ID returned by the OBS server
- **ObsException.getErrorHostId**: Requested server ID
- **ObsException.getResponseHeaders**: HTTP response headers

## 21.4 SDK Common Response Headers (SDK for Java)

After you call an API in an instance of **ObsClient**, an instance of the **HeaderResponse** class (or its sub-class) will be returned. It contains information about HTTP/HTTPS response headers.

Sample code for processing public response headers:

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Hard-coded or plaintext AK/SK are risky. For security purposes, encrypt your AK/SK and store them in the
// configuration file or environment variables. In this example, the AK/SK are stored in environment variables
// for identity authentication. Before running this example, configure environment variables ACCESS_KEY_ID
// and SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://
support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// Create an ObsClient instance.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
HeaderResponse response = obsClient.createBucket("bucketname");

// Obtain the request ID from the common response headers.
System.out.println("\t" + response.getRequestId());

obsClient.close();
```

## 21.5 Log Analysis (SDK for Java)

### How To Enable Logging

1. Save the **log4j2.xml** file obtained from the OBS Java SDK package to the **classpath** root directory.
2. Call **Log4j2Configurator.setLogConfig** to specify the save path of **log4j2.xml** directly.

#### NOTE

You can obtain the default log configuration file **log4j2.xml** from the OBS Java SDK package, and then modify to customize the file.

### Log Path

The log path of OBS Java SDK is specified in **log4j2.xml**. Logs are saved in the path represented by system variable **user.dir** of JDK by default. In general, there are three logs files as follows:

File Name	Description
OBS-SDK.interface_north.log	Northbound log file, which saves the logs about the communication between OBS Java SDK and third-party applications of users.
OBS-SDK.interface_south.log	Southbound log file, which saves the logs about the communication between OBS Java SDK and the OBS server.
OBS-SDK.access.log	Run log file of the OBS server.



## Log Format

The SDK log format is: *Log time|Thread number|Log level|Log content*. The following are example logs:

```
#Southbound logs
2017-08-21 17:40:07 133|main|INFO |HttpClient cost 157 ms to apply http request
2017-08-21 17:40:07 133|main|INFO |Received expected response code: true
2017-08-21 17:40:07 133|main|INFO |expected code(s): [200, 204].

#Northbound logs
2017-08-21 17:40:06 820|main|INFO |Storage|1|HTTP+XML|ObsClient|2017-08-21 17:40:05|2017-08-21
17:40:06|||0|
2017-08-21 17:40:07 136|main|INFO |Storage|1|HTTP+XML|setObjectAc|2017-08-21 17:40:06|2017-08-21
17:40:07|||0|
2017-08-21 17:40:07 137|main|INFO |ObsClient [setObjectAc] cost 312 ms
```

## Log Level

When current logs cannot be used to troubleshoot system faults, you can change the log level to obtain more information. You can obtain the most information in **TRACE** logs and the least information in **ERROR** logs.

Log level description:

- **OFF**: Close level. If this level is set, logging will be disabled.
- **TRACE**: Trace level. If this level is set, all log information will be printed. This level is not recommended.
- **DEBUG**: Debugging level. If this level is set, information about logs of the **INFO** level and above, HTTP/HTTPS request and response headers, and **StringToSign** information calculated by authentication algorithm will be printed.
- **INFO**: Information level. If this level is set, information about logs of the **WARN** level and above, time consumed for each HTTP/HTTPS request, and time consumed for calling the ObsClient API will be printed.
- **WARN**: Warning level. If this level is set, information about logs of the **ERROR** level and above, as well as information about some critical events (for example, the number of retry attempts exceeds the upper limit) will be printed.
- **ERROR**: Error level. If this level is set, only error information will be printed.

## How to Set

The following sample code shows how to set different levels for the southbound logs, northbound logs, and OBS server run logs. (For details about log configuration, see configuration file **log4j2.xml**.)

```
<!-- north log -->
<Logger name="com.obs.services.AbstractClient" level="INFO" additivity="false">
  <AppenderRef ref="NorthInterfaceLogAppender" />
</Logger>

<!-- south log -->
<Logger name="com.obs.services.internal.RestStorageService" level="WARN" additivity="false">
  <AppenderRef ref="SouthInterfaceLogAppender" />
</Logger>

<!-- access log -->
<Logger name="com.obs.log.AccessLogger" level="ERROR" additivity="false">
```

```
<AppenderRef ref="AccessLogAppender" />  
</Logger>
```

# 22 FAQs (SDK for Java)

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## 22.1 Can I Use This Document for Union SDK?

To make the most of this document, you are advised to download the latest version of Java SDK from [SDK Download and Installation \(SDK for Java\)](#).

## 22.2 How Can I Set an Object to Be Accessible to Anonymous Users? (Java SDK)

To do this, perform the following steps:

- Step 1** Configure the public read permission for the object by referring to [Configuring an Object ACL \(SDK for Java\)](#).
  - Step 2** Obtain the URL of the object by referring to [How Do I Obtain an Object URL? \(Java SDK\)](#) and provide it to anonymous users.
  - Step 3** An anonymous user can access the object by entering the URL on a browser.
- End

## 22.3 What Is the Retry Mechanism of SDK? (Java SDK)

SDK uses the `maxErrorRetry` parameter configured in [Creating and Configuring an OBS Client \(SDK for Java\)](#) to retry. The default value for retry times is **3**. **0** to **5** is recommended. If the network connection is abnormal or the server returns the `5XX` error when an `ObsClient` API is called, the SDK performs an exponential backoff retry.

### NOTICE

- For **ObsClient.putObject**, when the data source is an `InputStream` other than `FileInputStream`, the SDK does not retry when an I/O exception occurs because the data stream cannot be read back. The upper-layer application needs to retry.
- When **ObsClient.getObject** is successfully called and **ObsObject** is returned, the SDK does not retry when an I/O exception occurs during data reading from **ObsObject.getObjectContent** because this situation is beyond the scope of the processing logic of the SDK. The upper-layer application needs to retry.

## 22.4 How Do I Obtain the Static Website Access Address of a Bucket? (Java SDK)

After a bucket is configured to work in static website hosting mode, you can use the following method to combine the static website access address of the bucket.

`https://bucket name.static website hosting domain name`

## 22.5 How Do I Obtain an Object URL? (Java SDK)

If the uploaded object is set to be read by anonymous users, anonymous users can download the object through the object URL directly. Methods to obtain the object URL are as follows:

Method 1: Query by calling the API. After an object is uploaded using the `ObsClient` API, **PutObjectResult** is returned. You can call **getObjectUrl** to obtain the URL of the uploaded object. The sample code is as follows:

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Hard-coded or plaintext AK/SK are risky. For security purposes, encrypt your AK/SK and store them in the
// configuration file or environment variables. In this example, the AK/SK are stored in environment variables
// for identity authentication. Before running this example, configure environment variables ACCESS_KEY_ID
// and SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://support.huaweicloud.com/eu/usermanual-ca/ca\_01\_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
// Create an ObsClient instance.
ObsClient obsClient = new ObsClient(ak, sk, endPoint);
// Call putObject to upload the object and obtain the return result.
PutObjectResult result = obsClient.putObject("bucketname", "objectname", new File("localfile"));
// Read the URL of the uploaded object.
System.out.println("\t" + result.getObjectUrl());
```

Method 2: Assemble the URL in the format of `https://Bucket name.Domain name/Directory level/Object name`.

 NOTE

- If the object resides in the root directory of a bucket, its URL does not contain a directory level.
- For example, if you want to access the object named `test.txt` in the `test` folder of bucket `testbucket` in the EU-Dublin region, the URL for accessing this object is `https://testbucket.obs.eu-west-101.myhuaweicloud.eu/test/test.txt`.

## 22.6 How to Improve the Speed of Uploading Large Files over the Public Network? (Java SDK)

If the size of a file exceeds 100 MB, you are advised to upload the file using multipart upload over the public network. Multipart upload allows uploading a single object as parts separately. Each part is a part of consecutive object data. You can upload parts in any sequence. A part can be reloaded after an upload failure, without affecting other parts. Uploading multiple parts of an object using multiple threads concurrently can greatly improve the transmission efficiency.

For code examples, see [Multipart Upload \(SDK for Java\)](#).

## 22.7 How Do I Stop an Ongoing Upload Task? (Java SDK)

The SDK does not support this feature and secondary development is required. You can stop an ongoing upload task by stopping the data flow and capturing exceptions.

## 22.8 How Can I Perform a Multipart Upload? (Java SDK)

In a multipart upload, you can specify a part of the file to be uploaded by performing the following steps:

- Step 1** You need to initialize an instance of `ObsClient` by using AK, SK, and endpoint.
- Step 2** Specify the bucket name and object name to initialize `InitiateMultipartUploadRequest`. Call `InitiateMultipartUploadRequest.setMetadata` to set the metadata of the object to be uploaded. Then, call `ObsClient.initiateMultipartUpload` to initialize a multipart upload task. A globally unique identifier (upload ID) is returned to identify this task.
- Step 3** Specify the bucket name and object name to initialize `UploadPartRequest`. Call `UploadPartRequest.setUploadId` to set the upload ID to which the part to be uploaded belongs; call `setPartNumber` to set the part number of the part; call `setFile` to set the large file to which the part belongs; call `setPartSize` to set the part size; and then call `ObsClient.uploadPart` to upload the part. The ETag value of the uploaded part is returned.

**Step 4** After all parts are uploaded, specify the bucket name, object name, **uploadId**, and **partETags** to initialize a **CompleteMultipartUploadRequest** request. Then, call **ObsClient.completeMultipartUpload** to merge parts.

----End

For details, see [Multipart Upload \(SDK for Java\)](#).

## 22.9 How Can I Perform a Download in Multipart Mode? (Java SDK)

In a multipart download, you can specify the range of data to be downloaded. The procedure is as follows:

**Step 1** You need to initialize an instance of **ObsClient** by using AK, SK, and endpoint.

**Step 2** Specify the bucket name and object name to initialize **GetObjectRequest**. Call **GetObjectRequest.setRangeStart** and **GetObjectRequest.setRangeEnd** to set the start and end points of the object data to be downloaded.

**Step 3** Call **ObsClient.getObject** to send the **GetObjectRequest** request in step 2 to download the data in multipart mode.

----End

For details, see [Downloading an Object - Partial \(SDK for Java\)](#).

## 22.10 How Do I Confirm that an Upload is Successful If I Upload an Object to Overwrite an Existing Object with the Same Name in a Bucket? (Java SDK)

After the upload is complete, you can call **ObsClient.getObjectMetadata** to obtain the size and last modification time of the newly uploaded object and compare them with those of the overwritten object. If the sizes are the same and the last modification time of the new object is later than that of the overwritten object, the upload succeeded. Otherwise, the upload failed. For details about how to call **ObsClient.getObjectMetadata**, see [Obtaining Object Metadata \(SDK for Java\)](#).

## 22.11 How Do I Download an Encrypted Object Using a URL? (Java SDK)

If the object is encrypted with SSE-KMS, the server automatically decrypts the object when you use the URL of the object to download it. If the object is encrypted with SSE-C, you cannot access the object directly through a web browser because a request header is required for decryption. If you use code to download the encrypted object, configure the header by referring to [Code Example: Downloading an Object Encrypted Using SSE-C](#).

 NOTE

Accessing a server-side encrypted object requires the HTTPS protocol.

## 22.12 How Do I Generate an SSE-C Encryption Key?

Sample code of generating an SSE-C encryption key and its MD5 value:

```
import java.nio.charset.Charset;
import java.security.MessageDigest;
import java.security.NoSuchAlgorithmException;

public class SseCTool {
    public static void main(String[] args) {
        // Below is an encryption key example. The key can be changed as needed, but it must be 32
        // characters long (a 256-bit string).
        String keyString = System.getenv("ACCESS_KEY_ID");
        // Compute the x-obs-server-side-encryption-customer-key header.
        String customerKey = toBase64String(keyString.getBytes(Charset.forName("UTF-8")));
        System.out.println("customer key is : " + customerKey);

        // Compute the x-obs-server-side-encryption-customer-key-MD5 header.
        String customerKeyMD5 = computeMD5(fromBase64(customerKey));
        System.out.println("md5 for customer key is : " + customerKeyMD5);
    }

    // Compute the Base64 character string.
    public static String toBase64String(byte[] data) {
        java.util.Base64.Encoder encoder = java.util.Base64.getEncoder();
        return new String(encoder.encode(data), Charset.forName("UTF-8"));
    }

    // Compute the MD5 character string.
    public static String computeMD5(byte[] b64Data) {
        try {
            MessageDigest md5 = MessageDigest.getInstance("MD5");
            md5.update(b64Data);

            byte[] byteArray = md5.digest();

            return toBase64String(byteArray);
        } catch (NoSuchAlgorithmException e) {
            e.printStackTrace();
            return "";
        }
    }

    public static byte[] fromBase64(String b64Data) {
        java.util.Base64.Decoder decoder = java.util.Base64.getDecoder();
        return decoder.decode(b64Data.getBytes(Charset.forName("UTF-8")));
    }
}
```

## 22.13 How Do I Obtain the Security Token? (Java SDK)

A temporary access key (AK/SK) and SecurityToken are credentials issued for IAM users to temporarily access the system. Their validity period can be 15 minutes to 24 hours. After the issued temporary credentials expire, you need to request them again.

You can obtain a SecurityToken through [Password Authentication](#) or [an Agency](#).

## 22.14 Does the SDK Support Uploading, Downloading, or Copying Objects in a Batch? (Java SDK)

No.

Currently, the SDK does not provide such APIs. You need to encapsulate the service codes for uploading, downloading, or copying objects in a batch by yourself. The procedure is as follows:

- Step 1** List all objects to be uploaded, downloaded, or copied. For details about how to list objects to be downloaded, see [Listing Objects \(SDK for Java\)](#).
- Step 2** Call the API for uploading, downloading, or copying a single object for the listed objects.

----End

Sample code:

```
// Replace the following region with the one in use. EU-Dublin is used here as an example.
String endPoint = "https://obs.eu-west-101.myhuaweicloud.eu";
// Hard-coded or plaintext AK/SK are risky. For security purposes, encrypt your AK/SK and store them in the
// configuration file or environment variables. In this example, the AK/SK are stored in environment variables
// for identity authentication. Before running this example, configure environment variables ACCESS_KEY_ID
// and SECRET_ACCESS_KEY_ID.
// Obtain an AK/SK pair on the management console. For details, see https://
// support.huaweicloud.com/eu/usermanual-ca/ca_01_0003.html.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
final String bucketName = "bucketname";
// Define the prefix of objects in a bucket.
final String objectPre = "object/";
// Folder to be uploaded
final String localDirPath = "localDirPath";
final List<File> list = new ArrayList<>();
// Scan all objects in the folder.
static void listFiles(File file){
    File[] fs = file.listFiles();
    assert fs != null;
    if (fs.length < 1){
        // If an empty folder needs to be uploaded, add it to the list.
        list.add(file);
    }else{
        for (File f:fs){
            if (f.isDirectory()){
                listFiles(f);
            }
            if (f.isFile()){
                // Add objects to be uploaded to the list.
                list.add(f);
            }
        }
    }
}
// Traverse the folder to be uploaded and obtain all objects to be uploaded.
File file = new File(localDirPath);
listFiles(file);

// Create an instance of ObsClient.
final ObsClient obsClient = new ObsClient(ak, sk, endPoint);

// Initialize the thread pool.
```



```
ExecutorService executorService = Executors.newFixedThreadPool(20);

// Concurrently upload parts.
for (File f:list){
    executorService.execute() -> {
        if (f.isDirectory()){
            // For empty folders, create empty folder objects in the bucket.
            String remoteObjectKey = objectPre + f.getPath().substring(localDirPath.length() + 1) + "/";
            obsClient.putObject(bucketName, remoteObjectKey, new ByteArrayInputStream(new byte[0]));
        }else{
            String remoteObjectKey = objectPre + f.getPath().substring(localDirPath.length() + 1);
            obsClient.putObject(bucketName, remoteObjectKey, new File(f.getPath()));
        }
    }
}

// Wait until the upload is complete.
executorService.shutdown();
while (!executorService.isTerminated())
{
    try
    {
        executorService.awaitTermination(5, TimeUnit.SECONDS);
    }
    catch (InterruptedException e)
    {
        e.printStackTrace();
    }
}
// Close ObsClient.
try {
    obsClient.close();
} catch (IOException e) {
    e.printStackTrace();
}
```

#### NOTE

You can use multiple threads to concurrently upload, download, and copy data to improve efficiency.

## 22.15 What Is Content-Type (MIME)? (Java SDK)

Multipurpose Internet Mail Extensions (MIME) type is a standard way of describing a data type. The MIME type is passed in the Content-Type header.

#### NOTE

If you do not specify Content-Type when uploading an object, the SDK determines the object type based on the suffix of the specified object name and automatically assigns a value to Content-Type.

### Content-Type

Content-Type indicates the type of data to send or receive and determine the form and encoding method browsers will use to display data (mainly custom client files or media files). If no content type is specified, the type will be generated based on the file name extension. If there is no extension, the content type is **application/octet-stream** by default.

### Common Content Types

The commonly used content types are given in the table below.

**Table 22-1** List of common content types

File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.* (binary stream, unknown file type)	application/octet-stream	.tif	image/tiff
.a11	application/x-a11	.acp	audio/x-mei-aac
.ai	application/postscript	.aif	audio/aiff
.aifc	audio/aiff	.aiff	audio/aiff
.anv	application/x-anv	.apk	application/vnd.android.package-archive
.asa	text/asa	.asf	video/x-ms-asf
.asp	text/asp	.asx	video/x-ms-asf
.au	audio/basic	.avi	video/avi
.awf	application/vnd.adobe.workflow	.biz	text/xml
.bmp	application/x-bmp	.bot	application/x-bot
.c4t	application/x-c4t	.c90	application/x-c90
.cal	application/x-cals	.cat	application/vnd.ms-pki.seccat
.cdf	application/x-netcdf	.cdr	application/x-cdr
.cel	application/x-cel	.cer	application/x-x509-ca-cert
.cg4	application/x-g4	.cgm	application/x-cgm
.cit	application/x-cit	.class	java/
.cml	text/xml	.cmp	application/x-cmp
.cmx	application/x-cmx	.cot	application/x-cot
.crl	application/pkix-crl	.crt	application/x-x509-ca-cert
.csi	application/x-csi	.css	text/css
.csv	text/csv	.cut	application/x-cut
.dbf	application/x-dbf	.dbm	application/x-dbm

File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.dbx	application/x-dbx	.dcd	text/xml
.dcx	application/x-dcx	.der	application/x-x509-ca-cert
.dgn	application/x-dgn	.dib	application/x-dib
.dll	application/x-msdownload	.doc	application/msword
.docx	application/vnd.openxmlformats-officedocument.wordprocessingml.document	.dot	application/msword
.dotx	application/vnd.openxmlformats-officedocument.wordprocessingml.template	.drw	application/x-drw
.dtd	text/xml	.dwf	Model/vnd.dwf
.dwf	application/x-dwf	.dwg	application/x-dwg
.dxb	application/x-dxb	.dxf	application/x-dxf
.edn	application/vnd.adobe.edn	.emf	application/x-emf
.eml	message/rfc822	.ent	text/xml
.epi	application/x-epi	.eps	application/x-ps
.eps	application/postscript	.etd	application/x-ebx
.exe	application/x-msdownload	.fax	image/fax
.fdf	application/vnd.fdf	.fif	application/fractals
.fo	text/xml	.frm	application/x-frm
.g4	application/x-g4	.gbr	application/x-gbr
.	application/x-	.gif	image/gif
.gl2	application/x-gl2	.gp4	application/x-gp4

File Name Extension	Content-Type (Mime-Type)	File Name Extension	Content-Type (Mime-Type)
.hgl	application/x-hgl	.hmr	application/x-hmr
.hpg	application/x-hpgl	.hpl	application/x-hpl
.hqx	application/mac-binhex40	.hrf	application/x-hrf
.hta	application/hta	.htc	text/x-component
.htm	text/html	.html	text/html
.htt	text/webviewhtml	.htx	text/html
.icb	application/x-icb	.ico	image/x-icon
.ico	application/x-ico	.iff	application/x-iff
.ig4	application/x-g4	.igs	application/x-igs
.iii	application/x-iphone	.img	application/x-img
.ins	application/x-internet-signup	.ipa	application/vnd.iphone
.isp	application/x-internet-signup	.IVF	video/x-ivf
.java	java/*	.jfif	image/jpeg
.jpe	image/jpeg	.jpe	application/x-jpe
.jpeg	image/jpeg	.jpg	image/jpeg
.jpg	application/x-jpg	.js	application/javascript
.jsp	text/html	.la1	audio/x-liquid-file
.lar	application/x-laplayer-reg	.latex	application/x-latex
.lavs	audio/x-liquid-secure	.lbm	application/x-lbm
.lmsff	audio/x-la-lms	.ls	application/javascript
.ltr	application/x-ltr	.m1v	video/x-mpeg
.m2v	video/x-mpeg	.m3u	audio/mpegurl
.m4e	video/mpeg4	.mac	application/x-mac

File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.man	application/x-troff-man	.math	text/xml
.mdb	application/msaccess	.mdb	application/x-mdb
.mfp	application/x-shockwave-flash	.mht	message/rfc822
.mhtml	message/rfc822	.mi	application/x-mi
.mid	audio/mid	.midi	audio/mid
.mil	application/x-mil	.mml	text/xml
.mnd	audio/x-musicnet-download	.mns	audio/x-musicnet-stream
.mocha	application/x-javascript	.mov	video/quicktime
.movie	video/x-sgi-movie	mp1	audio/mp1
.mp2	audio/mp2	.mp2v	video/mpeg
.mp3	audio/mp3	.mp4	video/mp4
.mpa	video/x-mpg	.mpd	application/vnd.ms-project
.mpe	video/x-mpeg	.mpeg	video/mpg
.mpg	video/mpg	.mpga	audio/rn-mpeg
.mpp	application/vnd.ms-project	.mps	video/x-mpeg
.mpt	application/vnd.ms-project	.mpv	video/mpg
.mpv2	video/mpeg	.mpw	application/vnd.ms-project
.mpx	application/vnd.ms-project	.mtx	text/xml
.mxp	application/x-mmxp	.net	image/pnetvue
.nrf	application/x-nrf	.nws	message/rfc822
.odc	text/x-ms-odc	.out	application/x-out
.p10	application/pkcs10	.p12	application/x-pkcs12

File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.p7b	application/x-pkcs7-certificates	.p7c	application/pkcs7-mime
.p7m	application/pkcs7-mime	.p7r	application/x-pkcs7-certreqresp
.p7s	application/pkcs7-signature	.pc5	application/x-pc5
.pci	application/x-pci	.pcl	application/x-pcl
.pcx	application/x-pcx	.pdf	application/pdf
.pdb	chemical/x-pdb	.pdx	application/vnd.adobe.pdx
.pfx	application/x-pkcs12	.pgl	application/x-pgl
.pic	application/x-pic	.pko	application/vnd.ms-pki.pko
.pl	application/x-perl	.plg	text/html
.pls	audio/scpls	.plt	application/x-plt
.png	image/png	.png	application/x-png
.pot	application/vnd.ms-powerpoint	.potx	application/vnd.openxmlformats-officedocument.presentationml.template
.ppa	application/vnd.ms-powerpoint	.ppm	application/x-ppm
.pps	application/vnd.ms-powerpoint	.ppsx	application/vnd.openxmlformats-officedocument.presentationml.slide show
.ppt	application/vnd.ms-powerpoint	.ppt	application/x-ppt

File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.pptx	application/vnd.openxmlformats-officedocument.presentationml.presentation	.pr	application/x-pr
.prf	application/pics-rules	.prn	application/x-prn
.prt	application/x-prt	.ps	application/x-ps
.ps	application/postscript	.ptn	application/x-ptn
.pwz	application/vnd.ms-powerpoint	.r3t	text/vnd.rn-realtex3d
.ra	audio/vnd.rn-realaudio	.ram	audio/x-pn-realaudio
.ras	application/x-ras	.rat	application/rat-file
.rdf	text/xml	.rec	application/vnd.rn-recording
.red	application/x-red	.rgb	application/x-rgb
.rjs	application/vnd.rn-realsystem-rjs	.rjt	application/vnd.rn-realsystem-rjt
.rlc	application/x-rlc	.rle	application/x-rle
.rm	application/vnd.rn-realmedia	.rmf	application/vnd.adobe.rmf
.rmi	audio/mid	.rmj	application/vnd.rn-realsystem-rmj
.rmm	audio/x-pn-realaudio	.rmp	application/vnd.rn-rn_music_package
.rms	application/vnd.rn-realmedia-secure	.rmvb	application/vnd.rn-realmedia-vbr

File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.rmx	application/vnd.rn-realsystem-rmx	.rnx	application/vnd.rn-realplayer
.rp	image/vnd.rn-realpix	.rpm	audio/x-pn-realaudio-plugin
.rsml	application/vnd.rn-rsml	.rt	text/vnd.rn-realtex
.rtf	application/msword	.rtf	application/x-rtf
.rv	video/vnd.rn-realvideo	.sam	application/x-sam
.sat	application/x-sat	.sdp	application/sdp
.sdw	application/x-sdw	.sis	application/vnd.symbian.install
.six	application/vnd.symbian.install	.sit	application/x-stuffit
.slb	application/x-slb	.sld	application/x-sld
.sldx	application/vnd.openxmlformats-officedocument.presentationml.slide	.slk	drawing/x-slk
.smi	application/smil	.smil	application/smil
.smk	application/x-smk	.snd	audio/basic
.sol	text/plain	.sor	text/plain
.spc	application/x-pkcs7-certificates	.spl	application/futuresplash
.spp	text/xml	.ssm	application/streamingmedia
.sst	application/vnd.ms-pki.certstore	.stl	application/vnd.ms-pki.stl
.stm	text/html	.sty	application/x-sty
.svg	image/svg+xml	.swf	application/x-shockwave-flash



File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.tdf	application/x-tdf	.tg4	application/x-tg4
.tga	application/x-tga	.tif	image/tiff
.tif	application/x-tif	.tiff	image/tiff
.tld	text/xml	.top	drawing/x-top
.torrent	application/x-bittorrent	.tsd	text/xml
.txt	text/plain	.uin	application/x-icq
.uls	text/iuls	.vcf	text/x-vcard
.vda	application/x-vda	.vdx	application/vnd.visio
.vml	text/xml	.vpg	application/x-vpeg005
.vsd	application/vnd.visio	.vsd	application/x-vsdx
.vss	application/vnd.visio	.vst	application/vnd.visio
.vst	application/x-vst	.vsw	application/vnd.visio
.vsx	application/vnd.visio	.vtx	application/vnd.visio
.vxml	text/xml	.wav	audio/wav
.wax	audio/x-ms-wax	.wb1	application/x-wb1
.wb2	application/x-wb2	.wb3	application/x-wb3
.wbmp	image/vnd.wap.wbmp	.wiz	application/msword
.wk3	application/x-wk3	.wk4	application/x-wk4
.wkq	application/x-wkq	.wks	application/x-wks
.wm	video/x-ms-wm	.wma	audio/x-ms-wma
.wmd	application/x-ms-wmd	.wmf	application/x-wmf
.wml	text/vnd.wap.wml	.wmv	video/x-ms-wmv
.wmx	video/x-ms-wmx	.wmz	application/x-ms-wmz

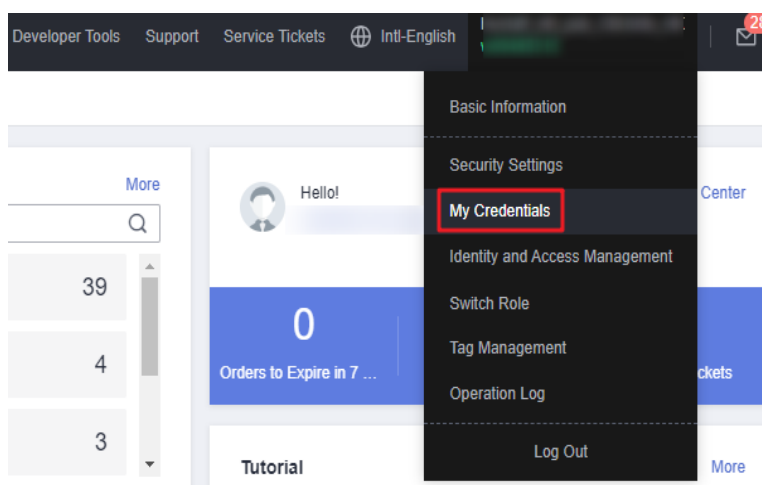
File Name Extension	Content-Type(Mime-Type)	File Name Extension	Content-Type(Mime-Type)
.wp6	application/x-wp6	.wpd	application/x-wpd
.wpg	application/x-wpg	.wpl	application/vnd.ms-wpl
.wq1	application/x-wq1	.wr1	application/x-wr1
.wri	application/x-wri	.wrk	application/x-wrk
.ws	application/x-ws	.ws2	application/x-ws
.wsc	text/scriptlet	.wsdl	text/xml
.wvx	video/x-ms-wvx	.xap	application/x-silverlight-app
.x_b	application/x-x_b	.xdp	application/vnd.adobe.xdp
.xdr	text/xml	.xfd	application/vnd.adobe.xfd
.xdf	application/vnd.adobe.xfdf	.xhtml	text/html
.xls	application/vnd.ms-excel	.xls	application/x-xls
.xlsx	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet	.xltx	application/vnd.openxmlformats-officedocument.spreadsheetml.template
.xlw	application/x-xlw	.xml	text/xml
.xpl	audio/scpls	.xq	text/xml
.xql	text/xml	.xquery	text/xml
.xsd	text/xml	.xsl	text/xml
.xslt	text/xml	.xwd	application/x-xwd
.x_t	application/x-x_t	.yaml	text/vnd.yaml
.yml	text/vnd.yml	.webp	image/webp
.tar	application/x-tar	.zip	application/zip

## 22.16 How Do I Get My Account ID and User ID?

### Obtaining Account, IAM User, and Project Information

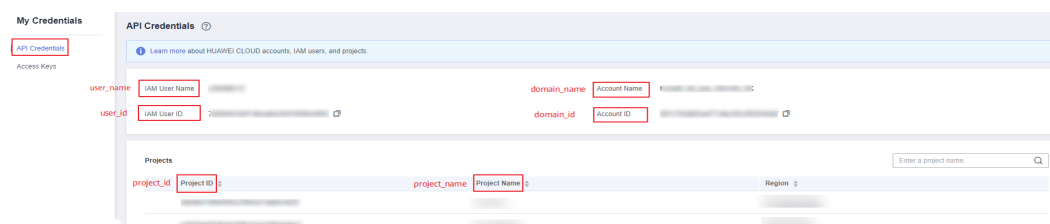
- Using the console
  - a. On the Huawei Cloud homepage, click **Console** in the upper right corner.
  - b. In the upper right corner, hover over the username and choose **My Credentials** from the drop-down list.

Figure 22-1 My Credentials



- 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 22-2 Viewing the account, user, and project information



- Calling an API
  - To obtain a user ID, see [Listing IAM Users](#).
  - To obtain a user ID, see [Querying Project Information](#).

### Obtaining User Group Information

**Step 1** Log in to the Huawei Cloud ID 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