Object Storage Service

Java SDK Developer Guide (Ally Region)

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1 Before You Start (SDK for Java)

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

Compatibility

- Recommended JDK versions: JDK 8 or later
- Third-party dependencies: This version is not completely compatible with earlier versions (2.1.*x*). OkHttp 3 should be used to replace HttpClient4.*x*.
- Namespace: This version is compatible with earlier versions (2.1.*x*). All external APIs are contained in the **com.obs.services**, **com.obs.services.model**, and **com.obs.services.exception** packages.
- API functions: This version is compatible with earlier versions (2.1.*x*).
- The earlier 2.*X* versions are no longer maintained. You are advised to upgrade them to the latest version as soon as possible.

Important Notes

- Make sure that you are familiar with OBS basic concepts in Help Center, such as buckets, objects, regions, and access keys (AKs/SKs).
- 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 Error Codes (SDK for Java)**.
- After an API is successfully called using an instance of **ObsClient**, a class or sub-class instance of **HeaderResponse** that contains response headers will be returned.
- Some features are available only in certain regions. If the HTTP status code 405 is returned when you call an API, check whether the feature is supported in the region.

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2 API Overview (SDK for Java)

Bucket APIs

Table 2-1 lists the bucket-related APIs.

Table 2-1 Bucket APIs

API	Method	Function	Source Code Example
Creating a Bucket (SDK for Java)	obsClient.createBucket(CreateBucketRequest request)	Creates a bucket at a specified endpoint and configures the storage class, region, and ACL for the bucket.	Submit a service ticket.
Obtaining a Bucket List (SDK for Java)	obsClient.listBuckets(ListBucketsRequest request)	Lists all buckets that meet the specified conditions under the current account and returns them in alphabetical order.	Submit a service ticket.
Deleting a Bucket (SDK for Java)	obsClient.deleteBucket(String bucketName)	Deletes an empty bucket (the name of a deleted bucket can be reused at least 30 minutes after the deletion).	Submit a service ticket.

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API	Method	Function	Source Code Example
Checking Whether a Bucket Exists (SDK for Java)	obsClient.headBucket(String bucketName)	Checks whether a bucket exists (HTTP status code **200** indicates the bucket exists, while **404** indicates it does not).	Submit a service ticket.
Obtaining Bucket Metadata (SDK for Java)	obsClient.getBucketMetadata(BucketMetadataInfoRequest request)	Returns information about a bucket, including the storage class, region, CORS rules, and redundancy policy.	Submit a service ticket.
Setting a Bucket ACL (SDK for Java)	obsClient.setBucketAcl(String bucketName,AccessControlList acl)	Sets an ACL for a bucket.	Submit a service ticket.
Obtaining a Bucket ACL (SDK for Java)	obsClient.getBucketAcl(String bucketName)	Returns the ACL of a bucket.	Submit a service ticket.
Configuring a Bucket Policy (SDK for Java)	obsClient.setBucketPolicy(String bucketName, String policy)	Sets a bucket policy.	Submit a service ticket.
Obtaining the Policy of a Bucket (SDK for Java)	obsClient.getBucketPolicy(String bucketName)	Returns a bucket policy.	Submit a service ticket.
Deleting a Bucket Policy (SDK for Java)	obsClient.deleteBucketPolicy(String bucketName)	Deletes a bucket policy (**204 No Content** is returned if the policy is deleted successfully or actually does not exist).	Submit a service ticket.
Obtaining the Region of a Bucket (SDK for Java)	obsClient.getBucketLocation(String bucketName)	Returns the region where the bucket is created.	Submit a service ticket.

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API	Method	Function	Source Code Example
Obtaining Storage Information of a Bucket (SDK for Java)	obsClient.getBucketStorageInfo(String bucketName)	Returns the storage information about a bucket, including the storage usage and the object count in the bucket.	Submit a service ticket.
Configuring a Storage Quota (SDK for Java)	obsClient.setBucketQuota(String bucketName, BucketQuota bucketQuota)	Sets a limit on the capacity of a bucket.	Submit a service ticket.
Obtaining a Bucket Storage Quota (SDK for Java)	obsClient.getBucketQuota(String bucketName)	Returns the quota of a bucket (**0** indicates there is no upper limit to the capacity of the bucket).	Submit a service ticket.
Configuring a Storage Class for a Bucket (SDK for Java)	obsClient.setBucketStoragePolicy(String bucketName, BucketStoragePolicy-Configuration bucketStorage)	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).	Submit a service ticket.
Obtaining the Storage Class of a Bucket (SDK for Java)	obsClient.getBucketStoragePolicy(String bucketName)	Returns the storage class of a bucket.	Submit a service ticket.

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API	Method	Function	Source Code Example
Configuring a Bucket Inventory Rule (SDK for Java)	obsClient.setInventoryConfiguration(SetInventoryConfigurationRequest request)	Configures an inventory rule for a bucket (you can specify the object information to include in inventories, such as the object version, size, storage class, and last modification time).	Submit a service ticket.
Obtaining a Bucket Inventory Rule (SDK for Java)	obsClient.getInventoryConfiguration(GetInventoryConfigurationRequest request)	Returns a bucket inventory rule specified by the rule ID.	Submit a service ticket.
Listing Bucket Inventory Rules (SDK for Java)	obsClient.listInventoryConfiguration(ListInventoryConfigurationRequest request)	Returns all inventory rules of a bucket in a single response.	Submit a service ticket.
Deleting a Bucket Inventory Rule (SDK for Java)	obsClient.deleteInventoryConfiguration(DeleteInventoryConfigurationRequest request)	Deletes a bucket inventory rule specified by the rule ID.	Submit a service ticket.

Object APIs

Table 2-2 lists object-related APIs.

Table 2-2 Object APIs

API	Method	Function	Source Code Example
Uploading an Object - Streaming (SDK for Java)	obsClient.putObject(PutObjectRequest request)	Uploads a local file of any type that is no larger than 5 GB to a bucket in streaming mode.	Submit a service ticket.

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API	Method	Function	Source Code Example
Uploading an Object - File-Based (SDK for Java)	obsClient.putObject(PutObjectRequest request)	Uploads local files of any type, such as texts, images, and videos, to a bucket.	-
Obtaining the Upload Progress (SDK for Java)	PutObjectRequest.setProgressListener(ProgressListener progressListener)	Returns the progress of uploading an object.	-
Creating a Folder (SDK for Java)	obsClient.putObject(PutObjectRequest request)	Creates a folder in a bucket to categorize the data.	Submit a service ticket.
Configuring Object Metadata During Object Upload (SDK for Java)	obsClient.setObjectMetadata(SetObjectMetadataRequest request)	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.	Submit a service ticket.
Initiating a Multipart Upload (SDK for Java)	obsClient.initiateMultipartUpload(InitiateMultipartUploadRequest request)	Initiates a multipart upload and returns a globally unique upload ID.	Submit a service ticket.
Uploading a Part (SDK for Java)	obsClient.uploadPart(UploadPartRequest request)	Uploads parts to the bucket based on the upload ID returned by the preceding API.	Submit a service ticket.

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API	Method	Function	Source Code Example
Assembling Parts (SDK for Java)	obsClient.completeMultipartUpload(CompleteMultipartUploadRequest request)	Completes a multipart upload based on the multipart upload ID and information about the uploaded parts (including **PartNumber** and **ETag**).	Submit a service ticket.
Aborting a Multipart Upload (SDK for Java)	obsClient.abortMultipartUpload(AbortMultipartUploadRequest request)	Aborts a multipart upload specified by the upload ID in a bucket.	-
Listing Uploaded Parts (SDK for Java)	obsClient.listParts(ListPartsRequest request)	Returns the uploaded parts in a bucket based on the specified multipart upload ID.	Submit a service ticket.
Listing Multipart Uploads (SDK for Java)	obsClient.listMultipartUploads(ListMultipartUploadsRequest request)	Lists ongoing multipart uploads.	-
Configuring Lifecycle Rules (SDK for Java)	obsClient.putObject(PutObjectRequest request)	Configures a lifecycle rule 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).	-
Uploading an Object - Append (SDK for Java)	obsClient.appendObject(AppendObjectRequest request)	Appends data to an existing object.	-

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API	Method	Function	Source Code Example
Uploading an Object - Resumable (SDK for Java)	obsClient.uploadFile(UploadFileRequest request)	Provides the resumable function based on the API for multipart uploads to better respond to network disconnections or program crashes.	-
Uploading an Object - Browser-Based (SDK for Java)	obsClient.createPostSignature(PostSignatureRequest request)	Uploads an object up to 5 GB in size to a bucket in the HTML form.	Submit a service ticket.
Downloading an Object - Streaming (SDK for Java)	obsClient.getObject(GetObjectRequest request)	Downloads an object from OBS to a local directory or memory (the returned results contain the object name, attributes, input stream, and bucket information).	Submit a service ticket.
Downloading an Object - Range-Based (SDK for Java)	obsClient.getObject(GetObjectRequest request)	Downloads the partial data of an object.	-
Obtaining the Download Progress (SDK for Java)	GetObjectRequest.setProgressListener(ProgressListener progressListener)	Returns the progress of downloading an object.	-
Downloading an Object - Conditional (SDK for Java)	obsClient.getObject(GetObjectRequest request)	Returns the objects that meet one or more specified conditions.	-

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API	Method	Function	Source Code Example
Rewriting Response Headers (SDK for Java)	obsClient.getObject(GetObjectRequest request)	Rewrites the following HTTP/HTTPS response headers when downloading an object: **Content-Type**, **Content-Language**, **Expires**, **Cache-Control**, **Content-Disposition**, and **Content-Encoding**.	-
Obtaining User-defined Metadata (SDK for Java)	obsClient.getObject(GetObjectRequest request)	Returns the user-defined object metadata after the object is successfully downloaded.	Submit a service ticket.
Restoring a Cold Object (SDK for Java)	obsClient.restoreObject(RestoreObjectRequest request)	Restores and downloads a Cold object.	Submit a service ticket.
Downloading an Object - Resumable (SDK for Java)	obsClient.downloadFile(DownloadFileRequest request)	Adds the resumable function to the partial download API.	-
Configuring Object Metadata (SDK for Java)	obsClient.setObjectMetadata(SetObjectMetadataRequest request)	Configures the object metadata.	-
Obtaining Object Metadata (SDK for Java)	obsClient.getObjectMetadata(GetObjectMetadataRequest request)	Returns the object metadata.	-
Configuring an Object ACL (SDK for Java)	obsClient.setObjectAcl(SetObjectAclRequest request)	Sets an ACL for an object when uploading the object or modifies the ACL of an existing object by calling an ACL API.	Submit a service ticket.

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API	Method	Function	Source Code Example
Obtaining an Object ACL (SDK for Java)	obsClient.getObjectAcl(GetObjectAclRequest request)	Obtains the ACL of an object in a specified bucket.	Submit a service ticket.
Listing Objects (SDK for Java)	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.	Submit a service ticket.
Deleting an Object (SDK for Java)	obsClient.deleteObject(DeleteObjectRequest request)	Deletes an object from a bucket.	Submit a service ticket.
Batch Deleting Objects (SDK for Java)	obsClient.deleteObjects(DeleteObjectsRequest deleteRequest)	Deletes objects from a bucket in a batch. (Deleted objects cannot be restored.)	Submit a service ticket.
Copying an Object (SDK for Java)	obsClient.copyObject(CopyObjectRequest request)	Creates a copy up to 5 GB for an object.	Submit a service ticket.
Copying an Object - Multipart (SDK for Java)	obsClient.copyPart(CopyPartRequest request)	Copies parts to a specified bucket based on the multipart upload ID returned in initiating a multipart upload.	Submit a service ticket.
Checking Whether an Object Exists (SDK for Java)	doesObjectExist(final GetObjectMetadataRequest request)	Checks whether an object exists (HTTP status code **200** indicates the object exists, while **404** indicates the object or bucket does not exist).	-

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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	Source Code Example
Accessing OBS Using a Signed URL (SDK for Java)	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.)	Submit a service ticket.

Versioning APIs

Table 2-4 lists the APIs related to versioning.

Table 2-4 Versioning APIs

API	Method	Function	Source Code Example
Configuring Versioning for a Bucket (SDK for Java)	obsClient.setBucketVersioning(final SetBucketVersio-ningRequest request)	Configures versioning for objects in a bucket.	Submit a service ticket.
Obtaining the Versioning Status of a Bucket (SDK for Java)	obsClient.getBucketVersioning(final BaseBucketRequest request)	Returns the versioning status of a bucket.	Submit a service ticket.
Obtaining an Object Version (SDK for Java)	obsClient.getObject(GetObjectRequest request)	Returns a specified object version.	-

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API	Method	Function	Source Code Example
Copying an Object Version (SDK for Java)	obsClient.copyObject(CopyObjectRequest request)	Creates a copy up to 5 GB for a versioned object.	-
Restoring a Specific Cold Object Version (SDK for Java)	obsClient.restoreObject(RestoreObjectRequest request)	Restores a Cold object version. (To download a Cold object version, you need to restore it first.)	-
Listing Object Versions (SDK for Java)	obsClient.listVersions(ListVersionsRequest request)	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.	Submit a service ticket.
Setting an ACL for an Object Version (SDK for Java)	obsClient.setObjectAcl(SetObjectAclRequest request)	Sets an ACL for an object version.	-
Obtaining the ACL of an Object Version (SDK for Java)	obsClient.getObjectAcl(GetObjectAclRequest request)	Returns the ACL of a specified object version.	-
Deleting an Object Version (SDK for Java)	obsClient.deleteObject(DeleteObjectRequest request)	Deletes an object version from a specified bucket.	-
Batch Deleting Object Versions (SDK for Java)	obsClient.deleteObjects(DeleteObjectsRequest deleteRequest)	Deletes object versions from a bucket in a batch. (Deleted object versions cannot be restored.)	Submit a service ticket.

Lifecycle Rule APIs

Table 2-5 lists the APIs related to lifecycle rules.

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Table 2-5 Lifecycle Rule APIs

API	Method	Function	Source Code Example
Setting Lifecycle Rules (SDK for Java)	obsClient.setBucketLifecycle(final SetBucketLifecycleRequest request)	Sets a lifecycle rule for a bucket to periodically delete objects in the bucket or transition object storage classes.	Submit a service ticket.
Obtaining Lifecycle Rules (SDK for Java)	obsClient.getBucketLifecycle(final BaseBucketRequest request)	Returns a lifecycle rule of a bucket.	Submit a service ticket.
Deleting Lifecycle Rules (SDK for Java)	obsClient.deleteBucketLifecycle(final BaseBucketRequest request)	Deletes a lifecycle rule of a bucket.	Submit a service ticket.

CORS rule APIs

Table 2-6 lists the APIs related to CORS rules.

Table 2-6 CORS rule APIs

API	Method	Function	Source Code Example
Configuring a CORS Rule (SDK for Java)	obsclient.setBucketCors(final SetBucketCorsRequest request)	Sets a CORS rule for a bucket (the existing rules will be overwritten by the new ones).	Submit a service ticket.
Obtaining a CORS Rule (SDK for Java)	obsclient.getBucketCors(final BaseBucketRequest request)	Returns a CORS rule of a bucket.	Submit a service ticket.
Deleting a CORS Rule (SDK for Java)	obsclient.deleteBucketCors(final BaseBucketRequest request)	Deletes a CORS rule of a bucket.	Submit a service ticket.

Bucket Logging APIs

Table 2-7 lists the logging APIs.

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Table 2-7 Bucket logging APIs

API	Method	Function	Source Code Example
Configuring Logging for a Bucket (SDK for Java)	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.	Submit a service ticket.
Obtaining the Logging Configuration of a Bucket (SDK for Java)	obsClient.getBucketLogging(final BaseBucketRequest request)	Returns the logging configuration of a bucket.	Submit a service ticket.

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	Source Code Example
Hosting Website Files in a Bucket (SDK for Java)	1. obsClient.putObject(PutObjectRequest request) 2. obsClient.setObjectAcl(SetObjectAclRequest acl)	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.	-
Configuring Static Website Hosting (SDK for Java)	obsClient.setBucketWebsite(final SetBucketWebsiteRequest request)	Configures website hosting for a bucket.	Submit a service ticket.
Obtaining Static Website Hosting Configurations (SDK for Java)	obsClient.getBucketWebsite(final BaseBucketRequest request)	Returns the website configuration of a bucket.	Submit a service ticket.

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API	Method	Function	Source Code Example
Deleting Static Website Hosting Configurations (SDK for Java)	obsClient.deleteBucketWebsite(final BaseBucketRequest request)	Deletes the website configuration of a bucket.	Submit a service ticket.

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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 Access Keys

Access keys consist of two parts: an access key ID (AK) and a secret access key (SK). OBS uses access keys for signature verification to ensure 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. 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 classified into permanent access keys (AK/SK) and temporary access keys (AK/SK and security token). Each user can create at most two permanent access keys. Temporary access keys must be used within a given validity period. Once expired, they must be requested again. For security purposes, you are advised to use temporary access keys to access OBS. If you want to use permanent access keys, periodically update them. The following describes how to obtain two types of access keys.

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

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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 access keys (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 access keys, refer to the following:

  Temporary access keys are issued by the system and are only valid for 15 minutes to 24 hours. Once expired, they must be requested again. They follow the principle of least privilege. When a temporary AK/SK pair is used for authentication, a security token must be used at the same time.

Setting Up a Development Environment

- Download a recommended version of JDK from the **Oracle's official website** and install it. Recommended JDK versions: JDK 8 or later
- Download the latest version of Eclipse IDE for Java Developers from the **Eclipse's official website** and install it.

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4 SDK Download and Installation (SDK for Java)

Downloading OBS SDK for Java

You can obtain the latest version of Java SDK and Java SDK API document as follows:

OBS Java SDK API document: Submit a service ticket.

Java SDK API document: Submit a service ticket.

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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 permissions, 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 region where the bucket is to be created.
```

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

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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
            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);
            request.setLocation(exampleLocation);
            // 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 local file **localfile** to bucket **examplebucket** as object **objectname**. For details, 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
```

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```
ways.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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("objectname");
            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 object **objectname** from 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");
        // Enter the endpoint corresponding to the region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
```

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

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
```

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

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

Deleting an Object

The example below shows how to delete object **objectname** from 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
```

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```
            // 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();
        }
    }
}
```

Using an OBS Client

The example below shows how to use an ObsClient instance.

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

import java.io.File;
import java.io.IOException;
import java.util.Map;

// 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.
    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.getErrorMessage());

    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()) {
            System.out.println(header.getKey()+":"+header.getValue());
        }
```

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```
    }
    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.

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Task	Sub-task	Mandatory (Yes/No)	Description
	Configuring the endpoint and other parameters	Yes for the endpoint; no for other parameters	• 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. • You can configure other parameters for the client based on your needs.
Configuring SDK Logging (SDK for Java)	Configuring a log level	No	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.
	Configuring a storage path for log files	No	Configure a local path to store logs.

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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)**.

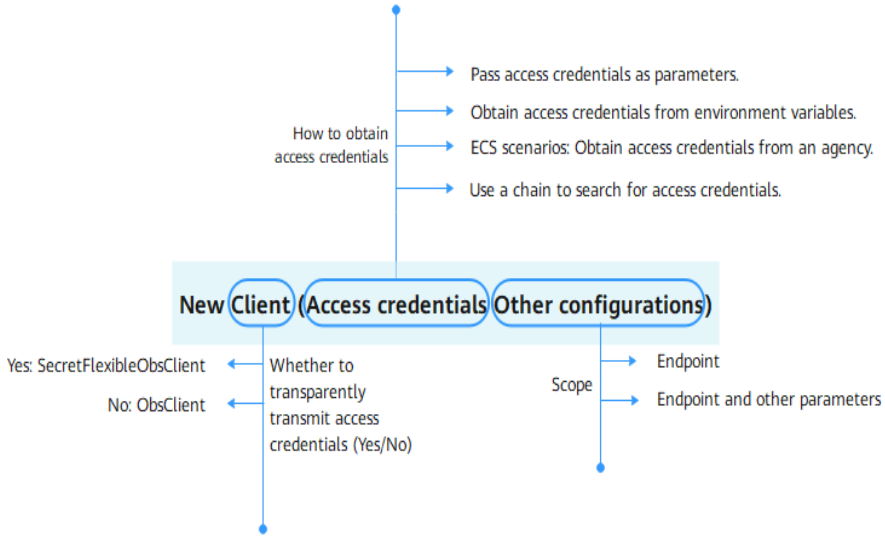
Important Notes

- 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.

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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 **ObsClient**.	**ObsClient**
	Client that transparently transmits access credentials	If you need to configure access credentials for each API call, use **SecretFlexibleObsClient**, which is inherited from **ObsClient**.	**SecretFlexibleObsClient**
Access credentials	Passing access credentials as parameters	Create an ObsClient instance and pass access credentials as parameters.	• **Passing Access Credentials as Parameters** • **BasicObsCredentialsProvider**

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Category	Option	Description	Sample Code
	Obtaining access credentials from environment variables	Create an ObsClient instance and use **EnvironmentVariableObsCredentialsProvider** to obtain access credentials from environment variables.	**EnvironmentVariableObsCredentialsProvider**
	Obtaining access credentials from an agency in ECS scenarios	Create an ObsClient instance and use **EcsObsCredentialsProvider** to automatically obtain temporary access credentials from the ECS. The access credentials are periodically updated automatically. **NOTICE** 1. To use **EcsObsCredentialsProvider**, ensure that the application runs on an ECS that has an IAM agency with OBS permissions. 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.	**EcsObsCredentialsProvider**
	Using a chain to search for access credentials	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 ObsClient instance. 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.	**OBSCredentialsProviderChain**
Other configurations	Configuring only the endpoint	Other than access credentials, only the endpoint is configured.	**Configuring Only the Endpoint**

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Category	Option	Description	Sample Code
	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 **ObsConfiguration** class to configure the ObsClient instance. For details about the supported parameters, see **Table 6-3**.	**ObsConfiguration**

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)

```
// Enter the endpoint of the region where the bucket is located.
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 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.
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)

```
// Enter the endpoint of the region where the bucket is located.

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 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.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");
String securityToken = System.getenv("SECURITY_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

```
// Enter the endpoint of the region where the bucket is located.
```

```
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 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.
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**

```
// Enter the endpoint of the region where the bucket is located.

String endPoint = "https://your-endpoint";
// 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.
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.

```
// Enter the endpoint of the region where the bucket is located.

String endPoint = "https://your-endpoint";
// 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**

```
// Enter the endpoint of the region where the bucket is located.
```

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```
String endPoint = "https://your-endpoint";
// 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**

```
// Enter the endpoint of the region where the bucket is located.

String endPoint = "https://your-endpoint";
// 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.

```
// Enter the endpoint of the region where the bucket is located.

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 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.
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);
```

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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
```

- **validateCertificate**: By configuring **validateCertificate**, you can use the default trust store to check whether the certificate returned by the server is correct.

```
// Enter the endpoint of the region where the bucket is located.
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 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.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");

ObsConfiguration config = new ObsConfiguration();
config.setEndPoint(endPoint);
config.setValidateCertificate(true);
ObsClient obsClient = new ObsClient(ak, sk,config);
```

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

```
// Enter the endpoint of the region where the bucket is located.

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 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.
String ak = System.getenv("ACCESS_KEY_ID");
String sk = System.getenv("SECRET_ACCESS_KEY_ID");

// The URL cannot contain the protocol header http:// or https://.
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

```
// 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.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

- To improve the upload and download performance of files in the case that the network bandwidth meets the requirements, you can tune the **socketWriteBufferSize**, **socketReadBufferSize**, **readBufferSize**, and **writeBufferSize** parameters.
- 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	**Explanation:** The amount of time to wait when initially establishing an HTTP/HTTPS connection before giving up and timing out. **Default value**: **60000**, in milliseconds.	ObsConfiguration.setConnectionTimeout	[10000, 60000]
socketTimeout	**Explanation:** The amount of time to wait for data to be transferred by the socket layer before the transfer times out. **Default value**: **60000**, in milliseconds.	ObsConfiguration.setSocketTimeout	[10000, 60000]
idleConnectionTime	**Explanation:** If the idle time of a connection exceeds the value of this parameter, the connection is closed. To ensure your services run smoothly, you are advised to set this parameter to a value less than or equal to **29000** ms. **Default value**: **28000**, in ms.	ObsConfiguration.setIdleConnectionTime	[0, 29000]

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Parameter	Description	Method	Recommended Value
maxIdleConnections	**Explanation:** The allowed maximum number of pooled idle connections. **Default value**: **1000**	ObsConfiguration.setMaxIdleConnections	Configure this parameter based on your needs.
maxConnections	**Explanation:** The allowed maximum number of concurrent HTTP requests. **Default value**: **1000**	ObsConfiguration.setMaxConnections	Default
maxErrorRetry	**Explanation:** The allowed maximum number of retry attempts for failed requests (for example, request exceptions, or **500** or **503** error responses from the server). **Restrictions:** This parameter is invalid if an exception occurs when the data stream of the object to upload or download is being processed. **Default value**: **3**	ObsConfiguration.setMaxErrorRetry	[0, 5]

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Parameter	Description	Method	Recommended Value
endPoint	**Explanation:** OBS server address. It consists of a protocol type, domain name, and port number, for example, **https://***your-endpoint***:443**. For security purposes, you are advised to use HTTPS. **Restrictions:** For DNS resolution and OBS reliability reasons, **you are not allowed to specify an IP address for this parameter** because this will lead to a path-style request being used, which is prohibited by OBS. You need to use a domain name to specify this parameter. **Default value**: None	ObsConfiguration.setEndPoint	Configure this parameter based on your needs.
httpProxy	**Explanation:** HTTP proxy configuration. **Default value**: This parameter is left blank by default.	ObsConfiguration.setHttpProxy	Configure this parameter based on your needs.
validateCertificate	**Explanation:** Whether to verify the server certificate. **Value range**: • **true**: The server certificate is verified. • **false**: The server certificate is not verified. **Default value**: **false**	ObsConfiguration.setValidateCertificate	Configure this parameter based on your needs.

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Parameter	Description	Method	Recommended Value
verifyResponseContentType	**Explanation:** Whether to verify the **ContentType** header in the response. **Value range**: • **true**: The **ContentType** header is verified. • **false**: The **ContentType** header is not verified. **Default value**: true	ObsConfiguration.setVerifyResponseContentType	Default
readBufferSize	**Explanation:** Size of the buffer used for downloading objects from socket streams. The value **-1** indicates that no buffer is configured. **Default value**: **-1**, in bytes.	ObsConfiguration.setReadBufferSize	Configure this parameter based on your needs.
writeBufferSize	**Explanation:** Size of the buffer used for uploading objects to socket streams. The value **-1** indicates that no buffer is configured. **Default value**: **-1**, in bytes.	ObsConfiguration.setWriteBufferSize	Configure this parameter based on your needs.
socketWriteBufferSize	**Explanation:** Size of the sending buffer of the socket. This parameter corresponds to **java.net.SocketOptions.SO_SNDBUF**. The value **-1** indicates that the size of the sending buffer is not set. **Default value**: The default value is **-1**, in bytes.	ObsConfiguration.setSocketWriteBufferSize	Default

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Parameter	Description	Method	Recommended Value
socketReadBufferSize	**Explanation:** Size of the receiving buffer of the socket. This parameter corresponds to **java.net.SocketOptions.SO_RCVBUF**. The value **-1** indicates that the size of the receiving buffer is not set. **Default value**: The default value is **-1**, in bytes.	ObsConfiguration.setSocketReadBufferSize	Default
keyManagerFactory	**Explanation:** Factory used for generating **javax.net.ssl.KeyManager**. **Default value**: This parameter is left blank by default.	ObsConfiguration.setKeyManagerFactory	Configure this parameter based on your needs.
trustManagerFactory	**Explanation:** Factory used for generating **javax.net.ssl.TrustManager**. **Default value**: This parameter is left blank by default.	ObsConfiguration.setTrustManagerFactory	Configure this parameter based on your needs.
isStrictHostnameVerification	**Explanation:** Whether to strictly verify the server-side host name. If this parameter is set to **true**, **javax.net.ssl.HttpsURLConnection.setDefaultHostnameVerifier** needs to be used to create an object as an implementation of **javax.net.ssl.HostnameVerifier** to verify the host name. **Value range**: • **true**: The host name of the server is strictly verified. • **false**: The host name of the server is not strictly verified. **Default value**: **false**	ObsConfiguration.setIsStrictHostnameVerification	Configure this parameter based on your needs.

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Parameter	Description	Method	Recommended Value
keepAlive	**Explanation:** Whether to use persistent connections to access OBS. **Value range**: • **true**: Persistent connections are used. • **false**: Persistent connections are not used. **Default value**: true	ObsConfiguration.setKeepAlive	Configure this parameter based on your needs.
cname	**Explanation:** Whether to use a user-defined domain name to access OBS. **NOTE** To protect your services from being affected if Huawei Cloud public domain names are taken over by relevant organizations, you are advised to use a user-defined domain name to access a bucket. **Value range**: • **true**: A user-defined domain name is used. • **false**: A user-defined domain name is not used. **Default value**: **false**	ObsConfiguration.setCname	Configure this parameter based on your needs.
sslProvider	**Explanation:** Provider of the SSLContext. **Default value**: The SSLContext provided by the JDK is used.	ObsConfiguration.setSslProvider	Configure this parameter based on your needs.
httpProtocolType	**Explanation:** HTTP protocol type used for accessing the OBS server. **Default value**: **HttpProtocolTypeEnum.HTTP1_1**: HTTP 1.1 **NOTE** If the value of **endPoint** does not contain any protocol, HTTPS is used by default.	ObsConfiguration.setHttpProtocolType	Configure this parameter based on your needs.

Parameter	Description	Method	Recommended Value
httpDispatcher	**Explanation:** User-defined dispatcher. **Default value**: None	ObsConfiguration.setHttpDispatcher	Configure this parameter based on your needs.
secureRandom	**Explanation:** User-defined random number generator. **Default value**: **new SecureRandom()** **NOTE** • On some platforms, the implementation of **new SecureRandom()** may be insecure. For security purposes, you are advised to use **ObsConfiguration.setSecureRandom()** to get a **SecureRandom** instance from a true random seed. • If an operating system does not have sufficient entropy to generate random numbers (for example, when the system is just started), **SecureRandom** 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.	ObsConfiguration.setSecureRandom	Configure this parameter based on your needs.

6.3 Configuring SDK Logging (SDK for Java)

OBS Java SDK provides the logging function, based on the Apache Log4j2 open library. You can modify log configuration files to configure logging 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 log storage path in the **log4j2.xml** file as required. The default log level is **WARN**, and the default log storage path is the path specified by the JDK system variable **user.dir**.

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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.

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7 Bucket APIs (SDK for Java)

7.1 Basic Operations (SDK for Java)

7.1.1 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 you call this API to create a bucket at a specified endpoint, you can also configure parameters such as the storage class, region, and ACL as needed.

Restrictions

- To create a bucket, you must have the **obs:bucket:CreateBucket** permission. IAM is recommended for granting permissions. For details, see .
- 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.

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)

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- 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, region, AZ redundancy 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	**CreateBucketRequest**	Yes	**Explanation:** Request parameters for creating a bucket. For details, see **Table 7-2**.

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Table 7-2 CreateBucketRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
location	String	Yes if the region where the OBS service resides is not the default region	**Explanation:** Region where a bucket will be located

Parameter	Type	Mandatory (Yes/No)	Description
acl	**AccessControlList**	No	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see **Table 7-3** for the available options. • To use a user-defined ACL, see **Table 7-5** to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE
storageClass	**StorageClassEnum**	No	**Explanation:** Bucket storage class that can be specified at bucket creation. **Value range**: See **Table 7-11**. **Default value**: **STANDARD**
extensionPermissionMap	Map<**ExtensionBucketPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionBucketPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 7-4**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
epid	String	No	**Explanation:** 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. **Restrictions:** The value of **epid** is a Universally Unique Identifier (UUID). **epid** is not required if you have not enabled EPS yet. Example: **9892d768-2d13-450f-aac7-ed0e44c2585f** **Default value**: None

Table 7-3 Pre-defined 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 abort multipart upload tasks. If this permission is granted on an object, anyone can read the content and metadata of the object.

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Constant	Description
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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 7-4 ExtensionBucketPermissionEnum

Constant	Description
GRANT_READ	Grants the **READ** permission to an account ID. The account with the **READ** permission can list objects, multipart uploads, and object versions in the bucket you are creating, and can obtain bucket metadata.

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Constant	Description
GRANT_WRITE	Grants the **WRITE** permission to an account ID. The account with the **WRITE** 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 **READ_ACP** permission to an account ID. The account with the **READ_ACP** permission can read the ACL of the bucket you are creating.
GRANT_WRITE_ACP	Grants the **WRITE_ACP** permission to an account ID. The account with the **WRITE_ACP** permission can modify the ACL of the bucket you are creating.
GRANT_FULL_CONTROL	Grants the **FULL_CONTROL** permission to an account ID. The account with the **FULL_CONTROL** permission can perform any operation on the bucket you are creating.
GRANT_READ_DELIVERED	Grants the **READ** permission to an account ID. By default, this **READ** permission applies to all objects in the bucket.
GRANT_FULL_CONTROL_DELIVERED	Grants the **FULL_CONTROL** permission to an account ID. By default, this **FULL_CONTROL** permission applies to all objects in the bucket.

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Table 7-5 AccessControlList

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

Table 7-6 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 7-7 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-8**. Grantee (user group) information. For details, see **Table 7-9**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: For details, see **Table 7-10**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 7-8 CanonicalGrantee

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

Table 7-9 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 7-10 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 7-11 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.

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Constant	Default Value	Description
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Responses

Table 7-12 ObsBucket

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

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

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Parameter	Type	Description
storageClass	StorageClassEnum	**Explanation:** Bucket storage class that can be specified at bucket creation. **Value range**: See Table 7-11. **Default value**: **STANDARD**
acl	AccessControlList	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 7-3 for the available options. • To use a user-defined ACL, see Table 7-5 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
```

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```
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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
            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);
            request.setLocation(exampleLocation);
            // 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 location.

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

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
```

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```
        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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";
            // Specify a bucket location.
            request.setBucketName(exampleBucket);
            request.setLocation(exampleLocation);
            // Create a bucket.
            ObsBucket bucket = obsClient.createBucket(request);
            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();
        }
    }
}
```

7.1.2 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.
- To query the bucket location when listing buckets, you need to set **ListBucketsRequest.setQueryLocation** to **true**.

Method

obsClient.listBuckets(**ListBucketsRequest request**)

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Request Parameters

Table 7-13 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ListBucketsRequest**	Yes	**Explanation:** Request parameters for listing buckets. For details, see **Table 7-14**.

Table 7-14 ListBucketsRequest

Parameter	Type	Mandatory (Yes/No)	Description
queryLocation	boolean	No	**Explanation:** Whether to query the bucket location **Value range**: • **true**: The bucket location is queried. • **false**: The bucket location is not queried. **Default value**: **false**

Responses

Table 7-15 ListBucketsResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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Parameter	Type	Description
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
owner	**Owner**	**Explanation:** Bucket owner information. For details, see **Table 7-16**. **Default value**: None
buckets	List<**ObsBucket**>	**Explanation:** Bucket list information. For details, see **Table 7-24**. **Default value**: None

Table 7-16 Owner

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

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Table 7-17 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Table 7-18 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 7-16**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 7-19**.

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Table 7-19 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-20**. Grantee (user group) information. For details, see **Table 7-21**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 7-22**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 7-20 CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if **Type** is set to **Grantee User**	**Explanation:** Account (domain) ID of the grantee. **Value range**: To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the grantee. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 7-21 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 7-22 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.
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.

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Constant	Default Value	Description
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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 7-23 Pre-defined ACL

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

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Constant	Description
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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

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Constant	Description
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 7-24 ObsBucket

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

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Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
owner	**Owner**	**Explanation:** Bucket owner information. For details, see **Table 7-16**.
creationDate	java.util.Date	**Explanation:** Time when the bucket is created. **Default value**: None
location	String	**Explanation:** Region where a bucket is located.

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Parameter	Type	Description
storageClass	StorageClassEnum	**Explanation:** Bucket storage class that can be specified at bucket creation. **Value range**: See Table 7-17. **Default value**: **STANDARD**
acl	AccessControlList	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 7-23 for the available options. • To use a user-defined ACL, see Table 7-18 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        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();
        }
    }
}
```

7.1.3 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.

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).
- Only empty buckets (without objects and part fragments) can be deleted.
- Bucket deletion is a non-idempotent operation and an error will be reported if the bucket you want to delete does not exist.

Method

obsClient.deleteBucket(String **bucketName**)

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Request Parameters

Table 7-25 List of request parameters

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

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Responses

Table 7-26 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
```

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```
            // 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();
        }
    }
}
```

7.1.4 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).
- When creating a bucket, you can specify its location. For details, see **Creating a Bucket**.

Method

obsClient.getBucketLocation(String **bucketName**)

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Request Parameters

Table 7-27 List of request parameters

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

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Responses

Table 7-28 BucketLocationResponse

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
location	String	**Explanation:** Region where a bucket is located.

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
```

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

7.1.5 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 about values for methods such as **BucketMetadataInfoResult.getAllowMethods**, see the **CORS** configurations of the bucket.

Method

obsClient.getBucketMetadata(**BucketMetadataInfoRequest request**)

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Request Parameters

Table 7-29 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	BucketMetadataInfoRequest	Yes	**Explanation:** Request parameters for obtaining bucket metadata. For details, see **Table 7-30**.

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Table 7-30 BucketMetadataInfoRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
origin	String	No	**Explanation:** Origin of the cross-domain request specified by the preflight request. Generally, it is a domain name. **Restrictions:** 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 break. **Default value**: None

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

Responses

Table 7-31 BucketMetadataInfoResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
location	String	**Explanation:** Region where a bucket is located.

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Parameter	Type	Description
obsVersion	String	**Explanation:** OBS version of the bucket. **Value range**: • **3.0** indicates the latest OBS version. • **--** indicates any version earlier than 3.0. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** Bucket storage class that can be specified at bucket creation. **Value range**: See **Table 7-32**. **Default value**: **STANDARD**
allowOrigin	String	**Explanation:** If **Origin** in the request meets the CORS rules of the bucket, **AllowedOrigin** specified in the CORS rules is returned. **Restrictions:** 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 break. **Default value**: None
allowHeaders	List<String>	**Explanation:** If **RequestHeader** in the request meets the CORS rules of the bucket, **AllowedHeader** specified in the CORS rules is returned. **Restrictions:** You can enter multiple allowed headers, with one separated from another using a line break. Each header can contain one wildcard character (*) at most. Spaces, ampersands (&), colons (:), and less-than signs (<) are not allowed. **Default value**: None

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Parameter	Type	Description
allowMethods	List<String>	**Explanation:** The allowed HTTP methods for a cross-origin request, indicating the operation types of buckets and objects. **Value range**: The following HTTP methods are supported: ● GET ● PUT ● HEAD ● POST ● DELETE **Default value**: None
exposeHeaders	List<String>	**Explanation:** The CORS-allowed additional headers in the response. These headers provide additional information to clients. By default, your browser can only access headers **Content-Length** and **Content-Type**. If your browser needs to access other headers, add them to the list of the allowed additional headers. **Restrictions:** Spaces, wildcard characters (*), ampersands (&), colons (:), and less-than signs (<) are not allowed. **Default value**: None
maxAge	int	**Explanation:** How long the response can be cached on a client. **Restrictions:** Each CORS rule can contain at most one **maxAge**. **Value range**: An integer greater than 0, in seconds **Default value**: 100

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Parameter	Type	Description
epid	String	**Explanation:** 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. **Restrictions:** The value of **Epid** is a UUID. If the default enterprise project is used, **0** is passed here or **Epid** is not included. **Epid** is not required for those who have not enabled the EPS. Example: **9892d768-2d13-450f-aac7-ed0e44c2585f** **Default value**: None

Table 7-32 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
```

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```
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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();
        }
    }
}
```

7.1.6 Checking Whether a Bucket Exists (SDK for Java)

Function

This API is used to check 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).

Method

obsClient.headBucket(String **bucketName**)

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Request Parameters

Table 7-33 List of request parameters

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

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Responses

Table 7-34 List of returned results

Type	Description
boolean	**Explanation:** Whether the bucket exists **Value range**: **true**: The bucket exists. **false**: The bucket does not exist. **Default value**: None

Sample Code

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

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
public class HeadBucket {
    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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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

7.2 Default Storage Class (SDK for Java)

7.2.1 Configuring a Storage Class for a Bucket (SDK for Java)

Function

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 bucket 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

For more information, see "Storage Classes" in the *User Guide (Ally Region)*.

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).
- 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**)

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Request Parameters

Table 7-35 Request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**:

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Parameter	Type	Mandatory (Yes/No)	Description
			None
bucketStorage	**BucketStoragePolicyConfiguration** (Inheriting **HeaderResponse**)	Yes	**Explanation:** Storage class of the bucket. **Value range**: See **Table 7-36**. **Default value**: None

Table 7-36 BucketStoragePolicyConfiguration

Parameter	Type	Description
storageClass	**StorageClassEnum**	**Explanation:** Storage class of the bucket. **Value range**: See **Table 7-37**. **Default value**: None

Table 7-37 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Responses

Table 7-38 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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;
import com.obs.services.model.StorageClassEnum;
public class SetBucketStoragePolicy001 {
    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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";

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

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

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```
        try {
            // Example bucket name
            String exampleBucket = "examplebucket";
            // Set the bucket's storage class to Warm.
            BucketStoragePolicyConfiguration storgePolicy = new BucketStoragePolicyConfiguration();
            storgePolicy.setBucketStorageClass(StorageClassEnum.WARM);
            obsClient.setBucketStoragePolicy(exampleBucket, storgePolicy);
            System.out.println("SetBucketStoragePolicy successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketStoragePolicy 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("SetBucketStoragePolicy failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

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

Function

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).

Method

obsClient.getBucketStoragePolicy(String **bucketName**)

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Request Parameters

Table 7-39 List of request parameters

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

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Responses

Table 7-40 BucketStoragePolicyConfiguration

Parameter	Type	Description
storageClass	StorageClassEnum	**Explanation:** Storage class of the bucket. For details, see Table 7-41.

Table 7-41 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Code Examples

This example returns the storage class of 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

7.3 Direct Reading (SDK for Java)

7.3.1 Configuring Direct Reading for Archive Storage Objects in a Bucket (SDK for Java)

Function

Direct reading means that you can directly perform operations on Archive Storage objects without restoring them.

By default, direct reading is disabled for Archive Storage objects in a bucket.

This API is used to enable or disable direct reading for Archive Storage objects in a bucket.

- When direct reading is enabled for Archive Storage objects in a bucket:
  - You can directly perform operations on Archive Storage objects in the bucket regardless of whether they have been restored.
  - If Archive Storage objects are not restored, your operations on them will be charged separately.
- When direct reading is disabled for Archive Storage objects in a bucket:
  - You need to restore Archive Storage objects in the bucket before you can operate them.

Direct reading means that you can directly perform operations on Archive Storage objects without restoring them. For more information about direct reading of Archive Storage data, see .

Restrictions

- To configure direct reading for Archive Storage objects in a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutDirectColdAccessConfiguration** granted using IAM or **PutDirectColdAccessConfiguration** granted using a bucket policy).

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- Direct reading of Archive Storage objects is not available for fusion buckets.

Method

obsClient.setBucketDirectColdAccess(SetBucketDirectColdAccessRequest request)

Request Parameters

Table 7-42 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-43	Yes	**Explanation:** Request parameters for configuring direct reading for Archive Storage objects in a bucket. For details, see **Table 7-43**.

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Table 7-43 SetBucketDirectColdAccessRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value:** None
access	BucketDirectColdAccess	Yes	**Explanation:** Direct reading configuration of Archive Storage objects in a bucket. **Value range:** For details, see **Table 7-44**. **Default value:** None

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Table 7-44 BucketDirectColdAccess

Parameter	Type	Mandatory (Yes/No)	Description
status	RuleStatusEnum	Yes	**Explanation:** Direct reading status of Archive Storage objects in a bucket. **Value range:** For details, see **Table 7-45**. **Default value:** None

Table 7-45 RuleStatusEnum

Constant	Default Value	Description
ENABLED	Enabled	Direct reading is enabled for Archive Storage objects in the bucket.
DISABLED	Disabled	Direct reading is disabled for Archive Storage objects in the bucket.

Responses

Table 7-46 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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

Sample Code

This example configures direct reading for Archive Storage objects in a bucket.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketDirectColdAccess;
import com.obs.services.model.RuleStatusEnum;
import com.obs.services.model.SetBucketDirectColdAccessRequest;

public class SetBucketDirectColdAccess {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import an 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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String exampleBucket = "exampleBucket";
            BucketDirectColdAccess access = new BucketDirectColdAccess(RuleStatusEnum.ENABLED);
            SetBucketDirectColdAccessRequest setBucketDirectColdAccessRequest = new SetBucketDirectColdAccessRequest(
                exampleBucket, access);
            obsClient.setBucketDirectColdAccess(setBucketDirectColdAccessRequest);
            System.out.println("SetBucketDirectColdAccess successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketDirectColdAccess 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();
```

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```
        } catch (Exception e) {
            System.out.println("SetBucketDirectColdAccess failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.3.2 Obtaining the Direct Reading Configuration of Archive Storage Objects in a Bucket (SDK for Java)

Function

A bucket owner can call this API to obtain the direct reading status of Archive Storage objects in the bucket.

If direct reading has never been configured for Archive Storage objects in the bucket or the direct reading configuration has been deleted, no direct reading status will be returned after this API call.

If direct reading of Archive Storage objects is configured for a bucket, you can call this API to obtain the direct reading status of Archive Storage objects in the bucket. For more information about direct reading of Archive Storage data, see .

Restrictions

- To obtain the direct reading configuration of Archive Storage objects in a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetInventoryConfiguration** granted using IAM or **GetInventoryConfiguration** granted using a bucket policy).

Method

obsClient.getBucketDirectColdAccess(BaseBucketRequest request)

Request Parameters

Table 7-47 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters for obtaining the direct reading configuration of Archive Storage objects in a bucket. For details, see **Table 7-48**.

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Table 7-48 BaseBucketRequest

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

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Responses

Table 7-49 BucketDirectColdAccess

Parameter	Type	Description
status	RuleStatusEnum	**Explanation:** Direct reading status of Archive Storage objects in a bucket. If direct reading has never been configured for Archive Storage objects in the bucket or the direct reading configuration has been deleted, no direct reading status will be returned after this API call. **Value range:** For details, see **Table 7-50**.

Table 7-50 RuleStatusEnum

Constant	Default Value	Description
ENABLED	Enabled	Direct reading is enabled for Archive Storage objects in the bucket.
DISABLED	Disabled	Direct reading is disabled for Archive Storage objects in the bucket.

Sample Code

This example obtains the direct reading configuration of Archive Storage objects in a bucket.

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

public class GetBucketDirectColdAccess {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import an 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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

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```
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String exampleBucket = "exampleBucket";
            BucketDirectColdAccess access = obsClient.getBucketDirectColdAccess(exampleBucket);
            System.out.println("Access status:"+ access.getStatus() );
            System.out.println("GetBucketDirectColdAccess successfully");
        } catch (ObsException e) {
            System.out.println("GetBucketDirectColdAccess 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("GetBucketDirectColdAccess failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.3.3 Deleting the Direct Reading Configuration of Archive Storage Objects in a Bucket (SDK for Java)

Function

This API is used to delete the direct reading configuration of Archive Storage objects in a bucket.

After the direct reading configuration is deleted, Archive Storage objects in the bucket cannot be read directly. If you then perform operations on Archive Storage objects that have not been restored or are being restored, a **403 Forbidden** error will be returned.

If direct reading of Archive Storage objects is configured for a bucket, you can delete the direct reading configuration of Archive Storage objects. After the deletion, Archive Storage objects in the bucket cannot be read directly. For more information about direct reading of Archive Storage data, see .

Restrictions

- To delete the direct reading configuration of Archive Storage objects in a bucket, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucketInventoryConfiguration** granted using IAM or **DeleteBucketInventoryConfiguration** granted using a bucket policy).

Method

obsClient.deleteBucketDirectColdAccess(BaseBucketRequest request)

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Request Parameters

Table 7-51 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters for deleting the direct reading configuration of Archive Storage objects in a bucket. For details, see **Table 7-52**.

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Table 7-52 BaseBucketRequest

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

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Responses

Table 7-53 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Sample Code

This example deletes the direct reading configuration of Archive Storage objects in a bucket.

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

public class DeleteBucketDirectColdAccess {
    public static void main(String[] args) {
        // Obtain an AK/SK pair using environment variables or import an 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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

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```
            obsClient.deleteBucketDirectColdAccess(exampleBucket);
            System.out.println("DeleteBucketDirectColdAccess successfully");
        } catch (ObsException e) {
            System.out.println("DeleteBucketDirectColdAccess 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("DeleteBucketDirectColdAccess failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.4 Bucket Storage Quota (SDK for Java)

7.4.1 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 objects 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).

Method

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

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Request Parameters

Table 7-54 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
bucketQuota	**BucketQuota**	Yes	**Explanation:** Bucket quota information **Restrictions:** See **Table 7-55**.

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Table 7-55 BucketQuota

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

Responses

Table 7-56 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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;
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

7.4.2 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.

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- 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).

Method

obsClient.getBucketQuota(String **bucketName**)

Request Parameters

Table 7-57 List of request parameters

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

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Responses

Table 7-58 BucketQuota

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

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

7.5 Bucket Storage Usage (SDK for Java)

7.5.1 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** granted using IAM or **GetBucketStorageInfo** granted using a bucket policy).

Method

obsClient.getBucketStorageInfo(String **bucketName**)

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Request Parameters

Table 7-59 List of request parameters

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

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Responses

Table 7-60 BucketStorageInfo

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

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");
```

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```
        // (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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

7.6 Bucket Inventory (SDK for Java)

7.6.1 Configuring a Bucket 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, and last modification time.

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).

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- **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.
- **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 filtering 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 **ab**, the filter of a new inventory rule cannot start with **a** or **abc**. To create such a rule, you need to first delete the existing inventory rule that conflicts with the rule you will create.
  - Bucket inventory files only support SSE-KMS encryption.
- **Permissions**
  - The OBS system user uploads inventory files to the destination bucket. Therefore, you need to grant the OBS 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 7-61 SetInventoryConfigurationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
inventoryConfiguration	**InventoryConfiguration**	Yes	**Explanation:** Inventory configurations for a bucket. For details, see **Table 7-62**.

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Table 7-62 InventoryConfiguration

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

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

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

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Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	**Explanation:** Whether versions of objects are included in an inventory. **Value range**: • If this parameter is set to **All**, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: **VersionId**, **IsLatest**, and **DeleteMarker**. • If this parameter is set to **Current**, the inventory only lists information about the current object version and does not include any version-related fields. **Default value**: None
optionalFields	ArrayList<String>	No	**Explanation:** Additional object metadata fields that are contained in an inventory file. **Value range**: **Size**: Object size. **LastModifiedDate**: The last time when the object was modified. **StorageClass**: The storage class of the object. **ETag**: The ETag value of the object. **IsMultipartUploaded**: Whether the object was uploaded in a **multipart upload**. **ReplicationStatus**: The cross-region replication status of the object. **EncryptionStatus**: The encryption status of the object. **BucketKeyStatus**: The bucket key status. **UserMeta**: The user-defined metadata. **CRC64**: The object's CRC64 value. **ObjectType**: The object type. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
filter	Table 11-2	No	**Explanation:** Filter criteria for generating bucket inventories. You can filter objects by object name prefix, whether the object is of the latest version, and whether the object is a delete marker. Multiple filter criteria can be combined using the And operator. **Restrictions:** The **filter** and **objectPrefix** parameters are mutually exclusive. If **filter** is set, it takes precedence. If **filter** is not set, **objectPrefix** is used. **Value range:** For details, see Table 11-2. **Default value:** None

Responses

Table 7-63 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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Sample Code

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

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```
        } 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();
        }
    }
}
```

7.6.2 Obtaining a Bucket 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).

Method

obsClient.getInventoryConfiguration(**GetInventoryConfigurationRequest request**)

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Request Parameters

Table 7-64 GetInventoryConfigurationRequest

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

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Responses

Table 7-65 GetInventoryConfigurationResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
inventoryConfiguration	**InventoryConfiguration**	**Explanation:** Bucket inventory configurations. For details, see **Table 7-66**.

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Table 7-66 InventoryConfiguration

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

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

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

Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	**Explanation:** Whether versions of objects are included in an inventory. **Value range**: • If this parameter is set to **All**, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: **VersionId**, **IsLatest**, and **DeleteMarker**. • If this parameter is set to **Current**, the inventory only lists information about the current object version and does not include any version-related fields. **Default value**: None
optionalFields	ArrayList<String>	No	**Explanation:** Additional object metadata fields that are contained in an inventory file. **Value range**: **Size**: Object size. **LastModifiedDate**: The last time when the object was modified. **StorageClass**: The storage class of the object. **ETag**: The ETag value of the object. **IsMultipartUploaded**: Whether the object was uploaded in a **multipart upload**. **ReplicationStatus**: The cross-region replication status of the object. **EncryptionStatus**: The encryption status of the object. **BucketKeyStatus**: The bucket key status. **UserMeta**: The user-defined metadata. **CRC64**: The object's CRC64 value. **ObjectType**: The object type. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
filter	Table 11-2	No	**Explanation:** Filter criteria for generating bucket inventories. You can filter objects by object name prefix, whether the object is of the latest version, and whether the object is a delete marker. Multiple filter criteria can be combined using the And operator. **Restrictions:** The **filter** and **objectPrefix** parameters are mutually exclusive. If **filter** is set, it takes precedence. If **filter** is not set, **objectPrefix** is used. **Value range:** For details, see Table 11-2. **Default value:** None

Sample Code

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

        try {
```

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```
            // 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();
        }
    }
}
```

7.6.3 Listing Bucket 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).

Method

obsClient.listInventoryConfiguration(**ListInventoryConfigurationRequest request**)

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Request Parameters

Table 7-67 ListInventoryConfigurationRequest

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

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Responses

Table 7-68 ListInventoryConfigurationResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
inventoryConfigurations	List<**InventoryConfiguration**>	**Explanation:** All inventory configurations of the bucket. For details, see **Table 7-69**.

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Table 7-69 InventoryConfiguration

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

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

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

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Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	**Explanation:** Whether versions of objects are included in an inventory. **Value range**: • If this parameter is set to **All**, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: **VersionId**, **IsLatest**, and **DeleteMarker**. • If this parameter is set to **Current**, the inventory only lists information about the current object version and does not include any version-related fields. **Default value**: None
optionalFields	ArrayList<String>	No	**Explanation:** Additional object metadata fields that are contained in an inventory file. **Value range**: **Size**: Object size. **LastModifiedDate**: The last time when the object was modified. **StorageClass**: The storage class of the object. **ETag**: The ETag value of the object. **IsMultipartUploaded**: Whether the object was uploaded in a **multipart upload**. **ReplicationStatus**: The cross-region replication status of the object. **EncryptionStatus**: The encryption status of the object. **BucketKeyStatus**: The bucket key status. **UserMeta**: The user-defined metadata. **CRC64**: The object's CRC64 value. **ObjectType**: The object type. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
filter	Table 11-2	No	**Explanation:** Filter criteria for generating bucket inventories. You can filter objects by object name prefix, whether the object is of the latest version, and whether the object is a delete marker. Multiple filter criteria can be combined using the And operator. **Restrictions:** The **filter** and **objectPrefix** parameters are mutually exclusive. If **filter** is set, it takes precedence. If **filter** is not set, **objectPrefix** is used. **Value range:** For details, see Table 11-2. **Default value:** None

Sample Code

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Set the following parameters.
```

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```
            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();
        }
    }
}
```

7.6.4 Deleting a Bucket 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).

Method

obsClient.deleteInventoryConfiguration(**DeleteInventoryConfigurationRequest request**)

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Request Parameters

Table 7-70 DeleteInventoryConfigurationRequest

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

Responses

Table 7-71 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Sample Code

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;

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

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```
        // 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();
        }
    }
}
```

7.7 Logging (SDK for Java)

7.7.1 Overview (SDK for Java)

OBS allows you to configure access logging for buckets. After the configuration, access to buckets will be recorded in logs. These logs will be saved in specific buckets in OBS.

You can enable OBS logging for bucket analysis or audit purposes. With access logs, a bucket owner can analyze the characteristics, types, or trends of requests sent to the bucket.

With logging enabled, OBS automatically logs access requests for the bucket and writes the generated log files into a specified bucket.

You need to specify a bucket for storing log files when enabling logging for a bucket. Log files can be stored in any bucket you own in the region where the logged bucket is, including the logged bucket itself.

For more information, see "Logging" in the *User Guide (Ally Region)*.

7.7.2 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

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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 Warm or Cold 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.
- 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).

Method

obsClient.setBucketLogging(final **SetBucketLoggingRequest request**)

Request Parameters

Table 7-72 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**SetBucketLoggingRequest**	Yes	**Explanation:** Request parameters for configuring logging for a bucket. For details, see **Table 7-73**.

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Table 7-73 SetBucketLoggingRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Name of the source bucket. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
loggingConfiguration	**BucketLoggingConfiguration**	Yes	**Explanation:** Bucket logging configurations. For details, see **Table 7-74**.

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Table 7-74 BucketLoggingConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
agency	String	Yes if you configure bucket logging	**Explanation:** 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. **Restrictions:** By default, the IAM agency only requires the **PutObject** permission to upload logs to the target bucket. If default encryption is enabled for the target bucket, the agency also requires the **KMS Administrator** permission in the region where the target bucket is located. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
targetBucketName	String	No	**Explanation:** Name of the bucket for storing log files. **Restrictions:** ● This bucket must be in the same region as the bucket with logging enabled. ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in

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Parameter	Type	Mandatory (Yes/No)	Description
			the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
logfilePrefix	String	No	**Explanation:** Name prefix for log files stored in the target bucket. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
targetGrantsList	List<**GrantAndPermission**>	No	**Explanation:** Permission information list of grantees, which defines grantees and their permissions for log files. For details, see **Table 7-75**.

Table 7-75 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-76**. Grantee (user group) information. For details, see **Table 7-77**.

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Parameter	Type	Mandatory (Yes/No)	Description
permission	Permission	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 7-78**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 7-76 CanonicalGrantee

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

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Table 7-77 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 7-78 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.
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.

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Constant	Default Value	Description
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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Responses

Table 7-79 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
    }
}
```

7.7.3 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).

Method

obsClient.getBucketLogging(final **BaseBucketRequest request**)

Request Parameters

Table 7-80 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters for obtaining the logging configurations of a bucket. For details, see **Table 7-81**.

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Table 7-81 BaseBucketRequest

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

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Table 7-82 BucketLoggingConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
agency	String	Yes if you configure bucket logging	**Explanation:** 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. **Restrictions:** By default, the IAM agency only requires the **PutObject** permission to upload logs to the target bucket. If default encryption is enabled for the target bucket, the agency also requires the **KMS Administrator** permission in the region where the target bucket is located. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
targetBucketName	String	No	**Explanation:** Name of the bucket for storing log files. **Restrictions:** ● This bucket must be in the same region as the bucket with logging enabled. ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
logfilePrefix	String	No	**Explanation:** Name prefix for log files stored in the target bucket. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
targetGrantsList	List<GrantAndPermission>	No	**Explanation:** Permission information list of grantees, which defines grantees and their permissions for log files. For details, see **Table 7-83**.

Table 7-83 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-84**. Grantee (user group) information. For details, see **Table 7-85**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 7-86**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 7-84 CanonicalGrantee

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

Table 7-85 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 7-86 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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 {
```

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```
    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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

7.8 Bucket ACLs (SDK for Java)

7.8.1 Setting a Bucket ACL (SDK for Java)

Function

Access control lists (ACLs) allow resource owners to grant other accounts the permissions to access resources. By default, only the resource owner has full control over resources when a bucket or object is created. That is, the bucket creator has full control over the bucket, and the object uploader has full control over the object. Other accounts do not have the permissions to access resources. If resource owners want to grant other accounts the read and write permissions on resources, they can use ACLs. ACLs grant permissions to accounts. After an

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account is granted permissions, both the account and its IAM users can access the resources.

You can configure a bucket ACL by referring to **Method**.

Restrictions

- A bucket can have up to 100 ACL rules.
- 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).

Method

- Method 1: Set a pre-defined ACL when creating a bucket.

```
obsBucket.setBucketName(exampleBucket);
// Set the bucket ACL to private read and write.
obsBucket.setAcl(AccessControlList.REST_CANNED_PRIVATE);
// Create a bucket.
obsClient.createBucket(obsBucket);
```

- Method 2: After the bucket is created, set a pre-defined ACL.

```
// Set the bucket ACL to private read and write.
obsClient.setBucketAcl(String exampleBucket, AccessControlList.REST_CANNED_PRIVATE);
```

- Method 3: After the bucket is created, set a user-defined ACL.

```
// Set a user-defined ACL for the bucket.
obsClient.setBucketAcl(String bucketName,AccessControlList acl);
```

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Request Parameters

Table 7-87 List of request parameters

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

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Parameter	Type	Mandatory (Yes/No)	Description
acl	AccessControlList	Yes	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 7-89 for the available options. • To use a user-defined ACL, see Table 7-88 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

Table 7-88 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	Owner	Yes	**Explanation:** Bucket owner information. For details, see Table 7-90.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Parameter	Type	Mandatory (Yes/No)	Type
grants	Set<GrantAndPermission>	No	**Explanation:** Grantee information. For details, see **Table 7-91**.

Table 7-89 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 abort multipart upload tasks. If this permission is granted on an object, anyone can read the content and metadata of the object.

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Constant	Description
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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

Table 7-90 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 7-91 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-92**. Grantee (user group) information. For details, see **Table 7-93**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 7-94**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 7-92 CanonicalGrantee

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

Table 7-93 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 7-94 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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Responses

Table 7-95 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        try {
            ObsBucket obsBucket = new ObsBucket();
            // Example bucket name
            String exampleBucket = "examplebucket";
            obsBucket.setBucketName(exampleBucket);
            // Set the bucket ACL to private read and write.
            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 an Existing 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 private read and write.
            obsClient.setBucketAcl(exampleBucket, AccessControlList.REST_CANNED_PRIVATE);
            System.out.println("SetBucketAcl successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketAcl failed");
```

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```
            // 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 User-defined ACL for an Existing 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 owner 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);
            // Set the bucket ACL.
```

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```
            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();
        }
    }
}
```

This example directly configures an ACL for bucket **examplebucket** and applies this ACL to the objects in the bucket.

```
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 SetBucketAcl004 {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 owner 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 specific user. The bucket ACL also applies to the objects in the bucket.
            acl.grantPermission(new CanonicalGrantee(exampleUserid), Permission.PERMISSION_FULL_CONTROL,true);
```

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```
            // Grant the read permission to all users. The bucket ACL also applies to the objects in the bucket.
            acl.grantPermission(GroupGrantee.ALL_USERS, Permission.PERMISSION_READ,true);
            // Set 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();
        }
    }
}
```

7.8.2 Obtaining a Bucket ACL (SDK for Java)

Function

Access control lists (ACLs) allow resource owners to grant other accounts the permissions to access resources. By default, only the resource owner has full control over resources when a bucket or object is created. That is, the bucket creator has full control over the bucket, and the object uploader has full control over the object. Other accounts do not have the permissions to access resources. If resource owners want to grant other accounts the read and write permissions on resources, they can use ACLs. ACLs grant permissions to accounts. After an account is granted permissions, both the account and its IAM users can access the resources.

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).

Method

obsClient.getBucketAcl(String **bucketName**)

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Request Parameters

Table 7-96 List of request parameters

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

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Table 7-97 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	Yes	**Explanation:** Bucket owner information. For details, see **Table 7-98**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 7-99**.

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Table 7-98 Owner

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

Table 7-99 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-100**. Grantee (user group) information. For details, see **Table 7-101**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 7-102**. **Default value**: None

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

Table 7-100 CanonicalGrantee

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

Table 7-101 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Table 7-102 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Code Examples

This example obtains the ACL of the **examplebucket** bucket.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

7.9 Bucket Policies (SDK for Java)

7.9.1 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.

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 different buckets, you need to configure different bucket policies for those users.

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 Policies and Object Policies" in the *User Guide (Ally Region)*.

Restrictions

- To configure a bucket policy, you must be the bucket owner or the bucket owner's IAM user with the required permission (**obs:bucket:PutBucketPolicy** in IAM or **PutBucketPolicy** in a 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.

Method

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

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Request Parameters

Table 7-103 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
policy	String	Yes	**Explanation:** Policy information in JSON format **Restrictions:** • The bucket name contained in the **Resource** parameter of the policy must be the same as the one specified for the current bucket policy. **Default value**: None

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Responses

Table 7-104 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Example bucket name
```

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```
            String exampleBucket = "examplebucket";
            // Example bucket policy
            String examplePolicy =
                    "{\"Statement\":[{\"Principal\":\"*\",\"Effect\":\"Allow\",\"Action\":\"ListBucket\",\"Resource
\":\""
                            + exampleBucket
                            + "\"}]}";
            obsClient.setBucketPolicy(exampleBucket, examplePolicy);
            System.out.println("SetBucketPolicy successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketPolicy 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();
        }
    }
}
```

7.9.2 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 .

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 the bucket owner's IAM user with the required permission (**obs:bucket:GetBucketPolicy** in IAM or **GetBucketPolicy** in a bucket policy).

Method

obsClient.getBucketPolicy(String **bucketName**)

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Request Parameters

Table 7-105 List of request parameters

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

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Responses

Table 7-106 List of returned results

Parameter	Type	Description
policy	String	**Explanation:** Policy information in JSON format **Default value**: None

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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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("GetBucketPolicy 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) {
```

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```
            System.out.println("GetBucketPolicy failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.9.3 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 .

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 the bucket owner's IAM user with the required permission (**obs:bucket:DeleteBucketPolicy** in IAM or **DeleteBucketPolicy** in a bucket policy).

Method

obsClient.deleteBucketPolicy(String **bucketName**)

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Request Parameters

Table 7-107 List of request parameters

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

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Responses

Table 7-108 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Example bucket name
```

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```
            String exampleBucket = "examplebucket";
            obsClient.deleteBucketPolicy(exampleBucket);
        } catch (ObsException e) {
            System.out.println("DeleteBucketPolicy 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("DeleteBucketPolicy failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.10 Server-Side Encryption (SDK for Java)

7.10.1 Configuring Bucket Encryption (SDK for Java)

Function

After you enable encryption for a bucket, the objects you upload to this bucket will be encrypted with the specified encryption method before they are stored in OBS. When you later download these encrypted objects, OBS decrypts them first and then returns them to you. This API is used to configure or update encryption for a bucket.

Restrictions

- To configure encryption for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutEncryptionConfiguration** in IAM or **PutEncryptionConfiguration** in a bucket policy).

Method

obsClient.setBucketEncryption(SetBucketEncryptionRequest request)

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Request Parameters

Table 7-109 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-110	Yes	**Explanation:** Request parameters for configuring encryption for a bucket. For details, see Table 7-110.

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Table 7-110 SetBucketEncryptionRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value:** None
bucketEncryption	**BucketEncryption**	Yes	**Explanation:** Bucket encryption configuration. **Value range:** For details, see **Table 7-111**. **Default value:** None

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Table 7-111 BucketEncryption

Parameter	Type	Mandatory (Yes/No)	Description
sseAlgorithm	SSEAlgorithmEnum	Yes	**Explanation:** Server-side encryption method. **Value range:** See Table 7-112. **Default value:** None
kmsKeyId	String	No	**Explanation:** KMS master key used for SSE-KMS. **Value range:** Valid value formats are as follows: • *regionID*:*domainID*:**key/***key_id* • *key_id* In the preceding formats: • *regionID* indicates the ID of the region where the key is used. • *domainID* indicates the ID of the account to which the key belongs. To obtain it, see • *key_id* indicates the ID of the key created on Data Encryption Workshop (DEW). **Default value:** If this parameter is not specified, the default master key will be used.

Table 7-112 SSEAlgorithmEnum

Constant	Default Value	Description
KMS	kms	Objects are encrypted using SSE-KMS.
AES256	AES256	Objects are encrypted using SSE-OBS.

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Responses

Table 7-113 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Code Examples

This example sets a bucket's encryption method to KMS.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketEncryption;
import com.obs.services.model.SSEAlgorithmEnum;

public class SetBucketEncryption {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

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```
            String exampleBucket = "examplebucket";
            // Specify the encryption method. SSE-KMS is used as an example.
            BucketEncryption encryption = new BucketEncryption(SSEAlgorithmEnum.KMS);
            obsClient.setBucketEncryption(exampleBucket, encryption);
            System.out.println("SetBucketEncryption successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketEncryption 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("SetBucketEncryption failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.10.2 Obtaining the Bucket Encryption Configuration (SDK for Java)

Function

After you enable encryption for a bucket, the objects you upload to this bucket will be encrypted with the specified encryption method before they are stored in OBS. When you later download these encrypted objects, OBS decrypts them first and then returns them to you.

This API returns the encryption configuration of a bucket.

Restrictions

- To obtain the encryption configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetEncryptionConfiguration** in IAM or **GetEncryptionConfiguration** in a bucket policy).

Method

obsClient.getBucketEncryption(BaseBucketRequest request)

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Request Parameters

Table 7-114 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-115	Yes	**Explanation:** Request parameters for obtaining the encryption configuration of a bucket. For details, see **Table 7-115**.

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Table 7-115 BaseBucketRequest

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

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Responses

Table 7-116 BucketEncryption

Parameter	Type	Description
sseAlgorithm	SSEAlgorithmEnum	**Explanation:** Server-side encryption method. **Value range:** See Table 7-117. **Default value:** None
kmsKeyId	String	**Explanation:** KMS master key used for SSE-KMS. **Value range:** Valid value formats are as follows: 1. *regionID*:*domainID*:**key/***key_id* 2. *key_id* In the preceding formats: • *regionID* indicates the ID of the region where the key is used. • *domainID* indicates the ID of the account to which the key belongs. To obtain it, see **How Do I Get My Account ID and User ID?** • *key_id* indicates the ID of the key created on Data Encryption Workshop (DEW).

Table 7-117 SSEAlgorithmEnum

Constant	Default Value	Description
KMS	kms	Objects are encrypted using SSE-KMS.
AES256	AES256	Objects are encrypted using SSE-OBS.

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Responses

Table 7-118 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Code Examples

This example obtains the encryption configuration of a bucket.

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

public class GetBucketEncryption {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

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```
            BucketEncryption encryption = obsClient.getBucketEncryption(exampleBucket);
            System.out.println("Encryption:" + encryption.getSseAlgorithm());
            System.out.println("GetBucketEncryption successfully");
        } catch (ObsException e) {
            System.out.println("GetBucketEncryption 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("GetBucketEncryption failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.10.3 Deleting the Bucket Encryption Configuration (SDK for Java)

Function

After you enable encryption for a bucket, the objects you upload to this bucket will be encrypted with the specified encryption method before they are stored in OBS. When you later download these encrypted objects, OBS decrypts them first and then returns them to you.

This API deletes the encryption configuration of a bucket.

Restrictions

- To delete the encryption configuration of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutEncryptionConfiguration** in IAM or **PutEncryptionConfiguration** in a bucket policy).

Method

obsClient.deleteBucketEncryption(BaseBucketRequest request)

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Request Parameters

Table 7-119 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters for deleting the encryption configuration of a bucket. For details, see **Table 7-120**.

Table 7-120 BaseBucketRequest

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

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Responses

Table 7-121 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Code Examples

This example deletes the encryption configuration of a bucket.

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

public class DeleteBucketEncry {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String exampleBucket = "examplebucket";
            obsClient.deleteBucketEncryption(exampleBucket);
```

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```
            System.out.println("DeleteBucketEncryption successfully");
        } catch (ObsException e) {
            System.out.println("DeleteBucketEncryption 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("DeleteBucketEncryption failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.11 Client-Side Encryption (SDK for Java)

7.11.1 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.

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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 7-122 CryptoObsClient

API	CryptoObsClient API Action
putObject	Encrypts streams or files and then uploads them to OBS.
getObject	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.

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Table 7-123

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)

7.11.2 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.

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Table 7-124 CtrRSACipherGenerator parameters

Parameter	Type	Mandatory (Yes/No)	Description
privateKey	PrivateKey	Yes when decrypting objects (for example, getObject)	**Explanation:** RSA private key. **Default value**: None
publicKey	PublicKey	Yes for encryption (for example, putObject)	**Explanation:** RSA public key. **Default value**: None
masterKeyInfo	String	No	**Explanation:** 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 **masterKeyInfo** on your own. **Default value**: None
secureRandom	SecureRandom	Yes	**Explanation:** Secure random number generator, which is used to randomly generate **cryptoKeyBytes** and **cryptoIvBytes**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
needSha256	boolean	No	**Explanation:** 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. **NOTE** 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. **Value range**: If **need_sha256** is set to **true**, 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. **false**: The SHA-256 value of the encrypted data is not verified. **Default value**: **false**

Table 7-125 CTRCipherGenerator parameters

Parameter	Type	Mandatory (Yes/No)	Description
masterKeyInfo	String	No	**Explanation:** Key information, which is stored in the user-defined metadata of objects to help you identify **cryptoKeyBytes**. You need to maintain the mappings between **cryptoKeyBytes** and **masterKeyInfo** on your own. **Default value**: None
cryptoKeyBytes	byte[]	Yes	**Explanation:** Data key used for encrypting data. **Restrictions:** The value must be 32 bytes long. **Default value**: None
cryptoIvBytes	byte[]	No	**Explanation:** Initial value used for encrypting data. **Restrictions:** • The value must be 16 bytes long. • 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. **Default value**: None
secureRandom	SecureRandom	Yes	**Explanation:** Secure random number generator, for use when either **cryptoKeyBytes** or **cryptoIvBytes** is missing. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
needSha256	boolean	No	**Explanation:** 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. **NOTE** 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. **Value range**: If **need_sha256** is set to **true**, 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. **false**: The SHA-256 value of the encrypted data is not verified. **Default value**: **false**

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, CTRCipherGenerator ctrCipherGenerator)

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Table 7-126 Parameters for initializing CryptoObsClient

Parameter	Type	Mandatory (Yes/No)	Description
accessKey	String	Yes	**Explanation:** Access key ID (AK). **Default value**: An empty string, indicating an anonymous user.
secretKey	String	Yes	**Explanation:** Secret access key (SK). **Default value**: An empty string, indicating an anonymous user.
endPoint	String	Yes	**Explanation:** OBS server address. It consists of a protocol type, domain name, and port number, for example, **https://***your-endpoint***:443**. For security purposes, you are advised to use HTTPS. **Default value**: None
ctrCipherGenerator	• **CtrRSACipherGenerator** • **CTRCipherGenerator**	Yes	**Explanation:** Cipher suite used by the client. **Value range**: • **CtrRSACipherGenerator** • **CTRCipherGenerator** **Default value**: None

APIs That Support Client-Side Encryption

Table 7-127 APIs that support client-side encryption

Method	Description
putObject	Uploads an object.
getObject	Downloads an object.

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Code Examples

The following is the sample code of 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // 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");
```

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```
        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 = 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("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 information.
        e.printStackTrace();
    }
  }
}
```

The following is the sample code of 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 CTRCipherGeneratorDemo001 {
  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.
```

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```
        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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // 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);
```

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

7.12 Custom Domain Names (SDK for Java)

7.12.1 Configuring a Custom Domain Name for a Bucket (SDK for Java)

Function

This API is used to configure a custom domain name for an OBS bucket.

Restrictions

- To configure a custom domain name for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:SetBucketCustomDomain** granted using IAM or **SetBucketCustomDomain** granted using a bucket policy).
-

Method

ObsClient.setBucketCustomDomain(SetBucketCustomDomainRequest request)

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Request Parameters

Table 7-128 SetBucketCustomDomainRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
domainName	String	Yes	**Explanation**: Custom domain name. **Restrictions:** None **Value range**: None **Default value**: None
customDomainCertificateConfig	**CustomDomainCertificateConfig**	No	**Explanation**: Custom domain name certificate configuration. **Restrictions:** Only HTTPS requests are supported. **Value range**: **CustomDomainCertificateConfig** **Default value**: None

Table 7-129 CustomDomainCertificateConfig

Parameter	Type	Mandatory (Yes/No)	Description
name	String	Yes	**Explanation**: Certificate name. **Restrictions:** None **Value range**: The value must contain 3 to 63 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
certificateId	String	No	**Explanation**: Certificate ID on the CCM. **Restrictions:** None **Value range**: The value must contain 16 characters. **Default value**: None
certificate	String	Yes	**Explanation**: Certificate content, which can contain intermediate and root certificates. If **certificateChain** contains a certificate chain, only the certificate itself will be extracted from **certificate**. **Restrictions:** Use escape characters **\n** or **\r\n** to replace line breaks. **Value range**: None **Default value**: None
certificateChain	String	No	**Explanation**: Certificate chain, which is optional and can be passed through the **certificate** parameter. **Restrictions:** Use escape characters **\n** or **\r\n** to replace line breaks. **Value range**: None **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
privateKey	String	Yes	**Explanation**: Private key of a certificate. **Restrictions:** • Private keys protected by passwords cannot be uploaded. • Use escape characters **\n** or **\r\n** to replace line breaks. **Value range**: None **Default value**: None

Responses

Type	Description
HeaderResponse	**Explanation**: SDK common results.

Table 7-130 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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

Sample Code

This example configures a custom domain name for a bucket.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.CustomDomainCertificateConfig;
import com.obs.services.model.HeaderResponse;
import com.obs.services.model.SetBucketCustomDomainRequest;

import java.util.Map;

public class SetBucketCustomDomain {
    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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT_S");
        String endPoint = "https://obs.cn-north-4.myhuaweicloud.com";

        // Create an ObsClient instance.
        ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            // Example bucket name
            String exampleBucket = "example-bucket";
            // Example custom domain name
            String exampleDomainName = "example.domain.name.com";
            // Example name of the certificate configured for the custom domain name
            String exampleDomainCertificateName = "exampleCertName";
            // Example ID of the certificate configured for the custom domain name
            String exampleDomainCertificateId = "1234512345123450";
            // Example custom domain name certificate
            String exampleDomainCertificate = "exampleDomainCertificate";
            // Example certificate chain of the custom domain name
            String exampleDomainCertificateChain = "exampleDomainCertificateChain";
            // Example private key of the custom domain name certificate
            String exampleDomainCertificatePrivateKey = "exampleDomainCertificatePrivateKey";
            CustomDomainCertificateConfig customDomainCertificateConfig = new CustomDomainCertificateConfig();
            customDomainCertificateConfig.setName(exampleDomainCertificateName);
            customDomainCertificateConfig.setCertificateId(exampleDomainCertificateId);
```

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```
            customDomainCertificateConfig.setCertificate(exampleDomainCertificate);
            customDomainCertificateConfig.setCertificateChain(exampleDomainCertificateChain);
            customDomainCertificateConfig.setPrivateKey(exampleDomainCertificatePrivateKey);
            SetBucketCustomDomainRequest setBucketCustomDomainRequest =
                new SetBucketCustomDomainRequest(exampleBucket, exampleDomainName,
customDomainCertificateConfig);
            // Configure the custom domain name for the bucket.
            HeaderResponse response = obsClient.setBucketCustomDomain(setBucketCustomDomainRequest);
            System.out.println("StatusCode:" + response.getStatusCode());
            System.out.println("RequestId:" + response.getRequestId());
            System.out.println("SetBucketCustomDomain successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketCustomDomain 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());
            // Check all Map entries and print all headers associated with the error.
            Map<String, String> headers = e.getResponseHeaders();
            if(headers != null){
                for (Map.Entry<String, String> header : headers.entrySet()) {
                    System.out.println(header.getKey()+":"+header.getValue());
                }
            }
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("SetBucketCustomDomain failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.12.2 Obtaining the Custom Domain Names of a Bucket (SDK for Java)

Function

This API is used to obtain the custom domain name list of an OBS bucket.

Restrictions

- To obtain the custom domain names of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketCustomDomain** granted using IAM or **GetBucketCustomDomain** granted using a bucket policy).
-

Method

ObsClient.getBucketCustomDomain(GetBucketCustomDomainRequest request)

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Request Parameters

Table 7-131 GetBucketCustomDomainRequest

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

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Responses

Type	Description
BucketCustomDomainInfo	**Explanation**: Information about the custom domain names of a bucket.

Table 7-132 BucketCustomDomainInfo

Parameter	Type	Description
domains	List<Domains>	**Explanation**: Custom domain name list.
statusCode	int	**Explanation**: HTTP status code. **Value range**: A status code is a group of digits indicating the status of a response. It ranges from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). **Default value**: None
responseHeaders	Map<String, Object>	**Explanation**: HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Table 7-133 Domains

Parameter	Type	Description
domainName	String	**Explanation:** Custom domain name.

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Parameter	Type	Description
createTime	java.util.Date	**Explanation**: Time when a custom domain name was created.
certificateId	String	**Explanation:** Certificate ID on the CCM.

Sample Code

This example obtains the custom domain name of a bucket.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketCustomDomainInfo;
import com.obs.services.model.GetBucketCustomDomainRequest;

import java.util.Map;

public class GetBucketCustomDomain {
    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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");
        String endPoint = "https://obs.cn-north-4.myhuaweicloud.com";

        // Create an ObsClient instance.
        try (ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint)) {
            // Example bucket name
            String exampleBucket = "example-bucket";
            // Obtain the custom domain name of the bucket.
            GetBucketCustomDomainRequest getBucketCustomDomainRequest = new GetBucketCustomDomainRequest(exampleBucket);
            BucketCustomDomainInfo bucketCustomDomainInfo =
                obsClient.getBucketCustomDomain(getBucketCustomDomainRequest);

            System.out.println("StatusCode:" + bucketCustomDomainInfo.getStatusCode());
            System.out.println("RequestId:" + bucketCustomDomainInfo.getRequestId());
            for(BucketCustomDomainInfo.Domains domain : bucketCustomDomainInfo.getDomains()) {
                System.out.println("DomainName:" + domain.getDomainName());
                System.out.println("CertificateId:" + domain.getCertificateId());
                System.out.println("CreateTime:" + domain.getCreateTime());
                System.out.println();
            }
            System.out.println("GetBucketCustomDomain successfully");
        } catch (ObsException e) {
            System.out.println("GetBucketCustomDomain failed");
            // Request failed. Print the HTTP status code.
            System.out.println("HTTP Code:" + e.getResponseCode());
```

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```
            // 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());
            // Check all Map entries and print all headers associated with the error.
            Map<String, String> headers = e.getResponseHeaders();
            if(headers != null){
                for (Map.Entry<String, String> header : headers.entrySet()) {
                    System.out.println(header.getKey()+":"+header.getValue());
                }
            }
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("GetBucketCustomDomain failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.12.3 Deleting the Custom Domain Name of a Bucket (SDK for Java)

Function

This API is used to delete the custom domain names of an OBS bucket.

Restrictions

- To delete the custom domain name of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:DeleteBucketCustomDomainConfiguration** granted using IAM or **DeleteBucketCustomDomainConfiguration** granted using a bucket policy).
-

Method

ObsClient.deleteBucketCustomDomain(DeleteBucketCustomDomainRequest request)

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Request Parameters

Table 7-134 DeleteBucketCustomDomainRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
domainName	String	Yes	**Explanation:** Custom domain name. **Restrictions:** None **Value range:** None **Default value**: None

Responses

Table 7-135 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Sample Code

This example deletes the custom domain name of a bucket.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.DeleteBucketCustomDomainRequest;
import com.obs.services.model.HeaderResponse;
```

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```
import java.util.Map;

public class DeleteBucketCustomDomain {
    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. CN North-Beijing4 is used here as an example.
Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");
        String endPoint = "https://obs.cn-north-4.myhuaweicloud.com";

        // Create an ObsClient instance.
        try (ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint)) {
            // Example bucket name
            String exampleBucket = "example-bucket";
            // Example custom domain name
            String exampleDomainName = "example.domain.name.com";
            DeleteBucketCustomDomainRequest deleteBucketCustomDomainRequest =
                new DeleteBucketCustomDomainRequest(exampleBucket,exampleDomainName);
            // Delete the custom domain name of the bucket.
            HeaderResponse response =
                obsClient.deleteBucketCustomDomain(deleteBucketCustomDomainRequest);

            System.out.println("StatusCode:" + response.getStatusCode());
            System.out.println("RequestId:" + response.getRequestId());
            System.out.println("DeleteBucketCustomDomain successfully");
        } catch (ObsException e) {
            System.out.println("DeleteBucketCustomDomain 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());
            // Check all Map entries and print all headers associated with the error.
            Map<String, String> headers = e.getResponseHeaders();
            if(headers != null){
                for (Map.Entry<String, String> header : headers.entrySet()) {
                    System.out.println(header.getKey()+":"+header.getValue());
                }
            }
            e.printStackTrace();
        } catch (Exception e) {
            System.out.println("DeleteBucketCustomDomain failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.13 Event Notifications (SDK for Java)

7.13.1 Overview (SDK for Java)

The event notification function allows users to be notified of their operations on buckets, ensuring users know events happened on buckets in a timely manner. Currently, OBS supports event notifications through Simple Message Notification (SMN).

For more information, see **Event Notifications**.

7.13.2 Configuring Event Notifications (SDK for Java)

Function

You can configure notifications for certain types of events. When such events happen in your bucket, you will be notified of the operations in a timely manner.

This API is used to configure event notifications for a bucket.

Restrictions

- To configure event notifications for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketNotification** granted using IAM or **PutBucketNotification** granted using a bucket policy).
-

Method

ObsClient.setBucketNotification(final SetBucketNotificationRequest request)

Request Parameters

Table 7-136 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-254	Yes	**Explanation:** Request parameters. For details, see Table 7-254.

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Table 7-137 SetBucketNotificationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value:** None
bucketNotificationConfiguration	**Table 7-255**	Yes	**Explanation:** Array of rules. For details, see **Table 7-255**.

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Table 7-138 BucketNotificationConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
topicConfigurations	List<**Table 7-139**>	No	**Explanation:** List of event notification topic configurations. **Value range:** For details, see **Table 7-139**. **Default value:** None
functionGraphConfigurations	List<**Table 7-140**>	No	**Explanation:** List of FunctionGraph configurations. **Value range:** For details, see **Table 7-140**. **Default value:** None

Table 7-139 TopicConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	**Explanation:** Unique ID of each event notification configuration. If the ID is not specified, OBS automatically assigns an ID. **Restrictions:** None **Default value:** None
filter	**Table 7-141**	Yes	**Explanation:** It stores rules for filtering object names. **Value range:** For details, see **Table 7-141**. **Default value:** None

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Parameter	Type	Mandatory (Yes/No)	Description
topic	String	Yes	**Explanation:** URN of the event notification topic. When OBS detects a specific event in the bucket, it publishes a notification message to the topic. You can find the topic's URN on the **Topics** page of the SMN console. **Restrictions:** None **Default value:** None
events	List<Table 7-142>	No	**Explanation:** List of event types for which notifications will be sent. **Value range:** For details, see Table 7-142. **Default value:** None

Table 7-140 FunctionGraphConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	**Explanation:** Unique ID of each event notification configuration. If the ID is not specified, OBS automatically assigns an ID. **Restrictions:** None **Default value:** None

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Parameter	Type	Mandatory (Yes/No)	Description
filter	Table 7-141	Yes	**Explanation:** It stores rules for filtering object names. **Value range:** For details, see Table 7-141. **Default value:** None
functionGraph	String	Yes	**Explanation:** URN of FunctionGraph. When OBS detects a specific event in the bucket, it sends a message to FunctionGraph and calls FunctionGraph. **Restrictions:** None **Default value:** None
events	List<Table 7-142>	No	**Explanation:** List of event types for which notifications will be sent. **Value range:** For details, see Table 7-142. **Default value:** None

Table 7-141 Filter

Parameter	Type	Mandatory (Yes/No)	Description
filterRules	List<Table 7-143>	Yes	**Explanation:** It stores rules for filtering object names. **Value range:** For details, see Table 7-143. **Default value:** None

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Table 7-142 EventTypeEnum

Constant	Description
OBJECT_CREATED_ALL	All events for creating objects, including uploading objects using PUT and POST, copying objects, and completing multipart uploads.
OBJECT_CREATED_PUT	All events for uploading objects using PUT.
OBJECT_CREATED_POST	All events for uploading objects using POST.
OBJECT_CREATED_COPY	All events for copying objects.
OBJECT_CREATED_COMPLETE_MULTIPART_UPLOAD	All events for completing multipart uploads.
OBJECT_REMOVED_ALL	Events of calling the APIs for deleting objects or aborting multipart uploads. These events include deleting objects by specifying object version IDs, and deleting objects without specifying object version IDs after versioning is enabled.
OBJECT_REMOVED_DELETE	Events for deleting objects by specifying object version IDs.
OBJECT_REMOVED_DELETE_MARKER_CREATED	Events for deleting objects without specifying object version IDs after versioning is enabled.

Table 7-143 FilterRule

Parameter	Type	Mandatory (Yes/No)	Description
name	String	No	Whether to filter objects by object name prefix or suffix. Possible values are: • **prefix** • **suffix**
value	String	No	Keyword used to filter objects based on the chosen prefix or suffix.

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Responses

Table 7-144 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Sample Code

Sample code is as follows:

```
// 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.
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);
BucketNotificationConfiguration bucketNotificationConfig = new BucketNotificationConfiguration();

TopicConfiguration topicConfig = new TopicConfiguration();
//Customize a message notification ID.
topicConfig.setId("id1");
//Topic URN. You need to create a topic, for example, urn:smn:region:project_id:smn_topic, on SMN.
topicConfig.setTopic("your topic");
topicConfig.getEventTypes().add(EventTypeEnum.OBJECT_CREATED_ALL);
Filter topicFilter = new Filter();
topicFilter.getFilterRules().add(new FilterRule("prefix", "smn"));
topicFilter.getFilterRules().add(new FilterRule("suffix", ".jpg"));
topicConfig.setFilter(topicFilter);
bucketNotificationConfig.addTopicConfiguration(topicConfig);

obsClient.setBucketNotification("bucketname", bucketNotificationConfig);
```

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7.13.3 Obtaining Event Notification Configurations (SDK for Java)

Function

You can configure notifications for certain types of events. When such events happen in your bucket, you will be notified of the operations in a timely manner.

This API is used to obtain the event notification configurations of a specified bucket.

Restrictions

- To obtain the event notification configurations of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketNotification** granted using IAM or **GetBucketNotification** granted using a bucket policy).
-

Method

ObsClient.getBucketNotification(final BaseBucketRequest request)

Request Parameters

Table 7-145 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	BaseBucketRequest	Yes	**Explanation:** Request parameters for obtaining event notification configurations. For details, see **Table 7-146**.

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Table 7-146 BaseBucketRequest

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

Responses

Table 7-147 BucketNotificationConfiguration

Parameter	Type	Description
topicConfigurations	List<**Table 7-148**>	**Explanation:** List of event notification topic configurations. **Value range:** For details, see **Table 7-148**.

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Parameter	Type	Description
functionGraphConfigurations	List<**Table 7-149**>	**Explanation:** List of FunctionGraph configurations. **Value range:** For details, see **Table 7-149**.

Table 7-148 TopicConfiguration

Parameter	Type	Description
id	String	**Explanation:** Unique ID of each event notification configuration. If the ID is not specified, OBS automatically assigns an ID.
filter	**Table 7-150**	**Explanation:** It stores rules for filtering object names. **Value range:** For details, see **Table 7-150**.
topic	String	**Explanation:** URN of the event notification topic. When OBS detects a specific event in the bucket, it publishes a notification message to the topic. You can find the topic's URN on the **Topics** page of the SMN console.
events	List<**Table 7-151**>	**Explanation:** List of event types for which notifications will be sent. **Value range:** For details, see **Table 7-151**.

Table 7-149 FunctionGraphConfiguration

Parameter	Type	Description
id	String	**Explanation:** Unique ID of each event notification configuration. If the ID is not specified, OBS automatically assigns an ID.

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Parameter	Type	Description
filter	Table 7-150	**Explanation:** It stores rules for filtering object names. **Value range:** For details, see Table 7-150.
functionGraph	String	**Explanation:** URN of FunctionGraph. When OBS detects a specific event in the bucket, it sends a message to FunctionGraph and calls FunctionGraph.
events	List<Table 7-151>	**Explanation:** List of event types for which notifications will be sent. **Value range:** For details, see Table 7-151.

Table 7-150 Filter

Parameter	Type	Description
filterRules	List<Table 7-152>	**Explanation:** It stores rules for filtering object names. **Value range:** For details, see Table 7-152.

Table 7-151 EventTypeEnum

Constant	Description
OBJECT_CREATED_ALL	All events for creating objects, including uploading objects using PUT and POST, copying objects, and completing multipart uploads.
OBJECT_CREATED_PUT	All events for uploading objects using PUT.
OBJECT_CREATED_POST	All events for uploading objects using POST.
OBJECT_CREATED_COPY	All events for copying objects.
OBJECT_CREATED_COMPLETE_MULTIPART_UPLOAD	All events for completing multipart uploads.

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Constant	Description
OBJECT_REMOVED_ALL	Events of calling the APIs for deleting objects or aborting multipart uploads. These events include deleting objects by specifying object version IDs, and deleting objects without specifying object version IDs after versioning is enabled.
OBJECT_REMOVED_DELETE	Events for deleting objects by specifying object version IDs.
OBJECT_REMOVED_DELETE_MARKER_CREATED	Events for deleting objects without specifying object version IDs after versioning is enabled.

Table 7-152 FilterRule

Parameter	Type	Mandatory (Yes/No)	Description
name	String	No	Whether to filter objects by object name prefix or suffix. Possible values are: • **prefix** • **suffix**
value	String	No	Keyword used to filter objects based on the chosen prefix or suffix.

Sample Code

Sample code is as follows:

```
// 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.
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);

BucketNotificationConfiguration config = obsClient.getBucketNotification("bucketname");

System.out.println(config);
```

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7.13.4 Disabling Event Notifications (SDK for Java)

Function

You can call **ObsClient.setBucketNotification** to clear all event notification configurations of a bucket.

Sample Code

The following code shows how to clear event notification configurations of a bucket:

```
// 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.
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);

obsClient.setBucketNotification("bucketname", new BucketNotificationConfiguration());
```

7.14 Cross-Origin Resource Sharing (SDK for Java)

7.14.1 Overview (SDK for Java)

Cross-origin access refers to access between different domains. Restricting cross-origin access is a browser policy for security purposes, that is, the same-origin policy.

Due to this same-origin policy, JavaScript in origin A cannot operate objects in origin B or C.

The same-origin policy requires the protocols, domain names (or IP addresses), and ports are all the same. If the protocols, domain names, and ports (if specified) of the two web pages are the same, the two web pages are in the same origin.

Cross-origin resource sharing (CORS) allows web application programs in one origin to access resources in another.

OBS supports CORS rules that allow the resources in OBS to be requested by other domains.

7.14.2 Configuring a CORS Rule (SDK for Java)

Function

Cross-origin resource sharing (CORS) is a mechanism defined by the World Wide Web Consortium (W3C) that allows a web application program in one domain to access resources located in another one. For general web page requests, website scripts and contents in one domain cannot interact with those in another because

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of Same Origin Policies (SOPs). OBS supports CORS rules that allow the resources in OBS to be requested by other domains.

You can call **obsClient.setBucketCors** to configure 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).

Method

obsClient.setBucketCors(final **SetBucketCorsRequest request**)

Request Parameters

Table 7-153 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**SetBucketCorsRequest**	Yes	Request parameters for setting a CORS rule. For details, see **Table 7-154**.

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Table 7-154 SetBucketCorsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
bucketCors	**BucketCors**	Yes	**Explanation:** List of CORS rules of a bucket. For details, see **Table 7-155**.

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Table 7-155 BucketCors

Parameter	Type	Mandatory (Yes/No)	Description
rules	List<**BucketCorsRule**>	Yes	**Explanation:** List of CORS rules of a bucket. For details, see **Table 7-156**.

Table 7-156 BucketCorsRule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	**Explanation:** CORS rule ID. **Value range**: The value must contain 1 to 255 characters. **Default value**: None
allowedMethod	List<String>	Yes	**Explanation:** The allowed HTTP methods for a cross-origin request, indicating the operation types for buckets and objects. **Value range**: The following HTTP methods are supported: • GET • PUT • HEAD • POST • DELETE **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
allowedOrigin	List<String>	Yes	**Explanation:** The origin from which the requests can access the bucket. **Restrictions:** Domain name of the origin. Each rule can contain at most one wildcard character (*), for example, **https://*.vbs.example.com**. **Default value**: None
allowedHeader	List<String>	No	**Explanation:** The allowed cross-origin request headers. Only CORS requests matching the allowed headers are valid. **Restrictions:** Each header can contain only one wildcard character (*). Spaces, ampersands (&), colons (:), and less-than signs (<) are not allowed. **Default value**: None
maxAgeSeconds	int	No	**Explanation:** Duration your client can cache the response for a cross-origin request. **Restrictions:** Each bucket CORS rule can contain only one **maxAgeSeconds**. **Value range**: An integer greater than or equal to 0, in seconds. **Default value**: 100

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Parameter	Type	Mandatory (Yes/No)	Description
exposeHeader	List<String>	No	**Explanation:** The CORS-allowed additional headers in the response. These headers provide additional information to clients. By default, your browser can only access headers **Content-Length** and **Content-Type**. If your browser needs to access other headers, add them to the list of the allowed additional headers. **Restrictions:** Spaces, wildcard characters (*), ampersands (&), colons (:), and less-than signs (<) are not allowed. **Default value**: None
responseVary	Boolean	No	**Explanation:** Whether to return the **Vary:Origin** response header. **Value range:** **True**: The **Vary:Origin** response header is returned. **False**: The **Vary:Origin** response header is not returned. **Default value:** None

Responses

Table 7-157 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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

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 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
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();
        }
    }
}
```

7.14.3 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).

Method

obsClient.getBucketCors(final **BaseBucketRequest request**)

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Request Parameters

Table 7-158 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	BaseBucketRequest	Yes	**Explanation:** Request parameters for obtaining a CORS rule. For details, see **Table 7-159**.

Table 7-159 BaseBucketRequest

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

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Table 7-160 BucketCors

Parameter	Type	Mandatory (Yes/No)	Description
rules	List<**BucketCorsRule**>	Yes	**Explanation:** List of CORS rules of a bucket. For details, see **Table 7-161**.

Table 7-161 BucketCorsRule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	**Explanation:** CORS rule ID. **Value range**: The value must contain 1 to 255 characters. **Default value**: None
allowedMethod	List<String>	Yes	**Explanation:** The allowed HTTP methods for a cross-origin request, indicating the operation types for buckets and objects. **Value range**: The following HTTP methods are supported: • GET • PUT • HEAD • POST • DELETE **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
allowedOrigin	List<String>	Yes	**Explanation:** The origin from which the requests can access the bucket. **Restrictions:** Domain name of the origin. Each rule can contain at most one wildcard character (*), for example, **https://*.vbs.example.com**. **Default value**: None
allowedHeader	List<String>	No	**Explanation:** The allowed cross-origin request headers. Only CORS requests matching the allowed headers are valid. **Restrictions:** Each header can contain only one wildcard character (*). Spaces, ampersands (&), colons (:), and less-than signs (<) are not allowed. **Default value**: None
maxAgeSeconds	int	No	**Explanation:** Duration your client can cache the response for a cross-origin request. **Restrictions:** Each bucket CORS rule can contain only one **maxAgeSeconds**. **Value range**: An integer greater than or equal to 0, in seconds. **Default value**: 100

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Parameter	Type	Mandatory (Yes/No)	Description
exposeHeader	List<String>	No	**Explanation:** The CORS-allowed additional headers in the response. These headers provide additional information to clients. By default, your browser can only access headers **Content-Length** and **Content-Type**. If your browser needs to access other headers, add them to the list of the allowed additional headers. **Restrictions:** Spaces, wildcard characters (*), ampersands (&), colons (:), and less-than signs (<) are not allowed. **Default value**: None
responseVary	Boolean	No	**Explanation:** Whether to return the **Vary:Origin** response header. **Value range:** **True**: The **Vary:Origin** response header is returned. **False**: The **Vary:Origin** response header is not returned. **Default value:** None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
```

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

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

7.14.4 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).

Method

obsClient.deleteBucketCors(final **BaseBucketRequest request**)

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Request Parameters

Table 7-162 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	BaseBucketRequest	Yes	**Explanation:** Request parameters for deleting a CORS rule. For details, see **Table 7-163**.

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Table 7-163 BaseBucketRequest

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

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Responses

Table 7-164 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Delete CORS rules.
```

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```
            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.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("deleteBucketCors failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.15 Static Website Hosting (SDK for Java)

7.15.1 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" in the *User Guide (Ally Region)*.

7.15.2 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).
- 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).

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Method

1. Uploading an object:
   obsClient.putObject(**PutObjectRequest request**)
2. Configuring an object ACL:
   obsClient.setObjectAcl(**SetObjectAclRequest acl**)

Request Parameters for Uploading an Object

Table 7-165 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**PutObjectRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 7-166**.

Table 7-166 PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	ObjectMetadata	No	**Explanation:** Object metadata. For details, see Table 7-177. **Default value**: None
acl	AccessControlList	No	**Explanation:** ACL that can be pre-defined when an object is created. Refer to Table 7-171 to choose the option you need. **Value range**: • To use a pre-defined ACL, see Table 7-179 for the available options. • To use a user-defined ACL, see Table 7-171 to configure the required parameters. **Default value**: None
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 7-170**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured only during object upload and cannot be modified by calling a metadata API. **Value range**: An integer greater than 0, in days. **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 7-167**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 7-167 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 7-168**. **Default value**: None

Table 7-168 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 7-169**. **Default value**: None

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Table 7-169 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Table 7-170 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.

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

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Constant	Default Value
AES256	AES256

Table 7-171 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 7-172**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 7-173**.

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Table 7-172 Owner

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

Table 7-173 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 7-175**. Grantee (user group) information. For details, see **Table 7-176**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 7-174**. **Default value**: None

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

Table 7-174 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.
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.

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Constant	Default Value	Description
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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 7-175 CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if **Type** is set to **Grantee User**	**Explanation:** Account (domain) ID of the grantee. **Value range**: To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the grantee. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 7-176 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 7-177 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.

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Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** ● The MD5 value of the file must be Base64 encoded. ● If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
storageClass	StorageClassEnum	No	**Explanation:** 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. **Value range**: See Table 7-178. **Default value**: None
webSiteRedirectLocation	String	No	**Explanation:** If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to. To another object in the same bucket: **WebsiteRedirectLocation:/anotherPage.html** To an external URL: **WebsiteRedirectLocation:http://www.example.com/** **Restrictions:** • The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. • OBS only supports redirection for objects in the root directory of a bucket. **Default value**: None
nextPosition	long	No	**Explanation:** Start position for the next append upload. **Value range**: 0 to the object length, in bytes. **Default value**: None

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

Table 7-178 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 7-179 Pre-defined 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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

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Constant	Description
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Request Parameters for Setting an Object ACL

Table 7-180 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	SetObjectAclRequest	Yes	**Explanation:** Request parameters for setting an object ACL. For details, see **Table 7-181**.

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Table 7-181 SetObjectAclRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
acl	**AccessControlList**	No	**Explanation:** An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see **Table 7-179** for the available options. • To use a user-defined ACL, see **Table 7-171** to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

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Responses for Uploading an Object

Table 7-182 PutObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** Object storage class. If the storage class is Standard, leave this parameter blank. **Value range**: See **Table 7-178**. **Default value**: None
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version ID will be returned. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An object created by an upload or copy operation has a unique ETag. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

Responses for Setting an Object ACL

Table 7-183 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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

Sample Code

This example configures static website hosting for bucket **examplebucket** by specifying the MIME type and setting the object ACL to public read.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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

After the preceding code is successfully executed, you can use **https://***bucketname.your-endpoint***/test.html** to access the hosted file in the browser.

7.15.3 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).

Method

obsClient.setBucketWebsite(final **SetBucketWebsiteRequest request**)

Request Parameters

Table 7-184 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**SetBucketWebsiteRequest**	Yes	**Explanation:** Request parameters for configuring website hosting. For details, see **Table 7-185**.

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Table 7-185 SetBucketWebsiteRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Value range**: The value must contain 3 to 63 characters.
websiteConfig	**WebsiteConfiguration**	Yes	**Explanation:** Static website hosting configurations. For details, see **Table 7-186**.

Table 7-186 WebsiteConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
suffix	String	No	**Explanation:** Suffix that is appended to the request for a directory. For example, if the suffix is **index.html** and you request **samplebucket/images/**, the returned data will be for the object named **images/index.html** in the bucket **samplebucket**. **Restrictions:** • **key**, **suffix**, and **routeRules** must be used together and they cannot be used with **redirectAllRequestsTo**. • When **key**, **suffix**, and **routeRules** are used together, **routeRules** can be left blank. • If you configure **key**, **suffix**, and **routeRules**, they must not be all left blank. **Value range**: This parameter can neither be left blank nor contain slashes (/). **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
key	String	No	**Explanation:** Object name to use when a **4***XX* error occurs. This parameter specifies the web page to display when an error occurs. **Restrictions:** • **key**, **suffix**, and **routeRules** must be used together and they cannot be used with **redirectAllRequestsTo**. • When **key**, **suffix**, and **routeRules** are used together, **routeRules** can be left blank. • If you configure **key**, **suffix**, and **routeRules**, they must not be all left blank. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
routeRules	List<**RouteRule**>	No	**Explanation:** List of routing rules. For details, see **Table 7-189**. **Restrictions:** • **key**, **suffix**, and **routeRules** must be used together and they cannot be used with **redirectAllRequestsTo**. • When **key**, **suffix**, and **routeRules** are used together, **routeRules** can be left blank. • If you configure **key**, **suffix**, and **routeRules**, they must not be all left blank. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
redirectAllRequestsTo	RedirectAllRequest	No	**Explanation:** Redirection rules for all requests. For details, see Table 7-187. **Restrictions:** • **key**, **suffix**, and **routeRules** must be used together and they cannot be used with **redirectAllRequestsTo**. • If you configure **redirectAllRequestsTo**, it must not be left blank. **Default value**: None

Table 7-187 RedirectAllRequest

Parameter	Type	Mandatory (Yes/No)	Description
hostName	String	Yes	**Explanation:** Host name used for redirection, for example, **www.example.com**. **Restrictions:** The host name must comply with the host name rules. **Default value**: None
protocol	ProtocolEnum	No	**Explanation:** Protocol used for redirection. **Value range**: See Table 7-188. **Default value**: None

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Table 7-188 ProtocolEnum

Constant	Default Value	Description
HTTP	http	HTTP protocol used for redirection.
HTTPS	https	HTTPS protocol used for redirection.

Table 7-189 RouteRule

Parameter	Type	Mandatory (Yes/No)	Description
condition	**RouteRuleCondition**	No	**Explanation:** Conditions of a redirection rule. For details, see **Table 7-190**.
redirect	**Redirect**	Yes	**Explanation:** Details about the redirection. For details, see **Table 7-191**.

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Table 7-190 RouteRuleCondition

Parameter	Type	Mandatory (Yes/No)	Description
keyPrefixEquals	String	No	**Explanation:** 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. For example, to redirect the requests for the object **ExamplePage.html**, set **keyPrefixEquals** to **ExamplePage.html**. **Restrictions:** This parameter cannot be used together with **httpErrorCodeReturnedEquals**. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
httpErrorCodeReturnedEquals	String	No	**Explanation:** 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. For example, if you want to redirect requests to **NotFound.html** when HTTP error code **404** is returned, set **httpErrorCodeReturnedEquals** to **404** in **RouteRuleCondition**, and set **replaceKeyWith** to **NotFound.html** in **Redirect**. **Restrictions:** This parameter cannot be used together with **keyPrefixEquals**. **Default value**: None

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Table 7-191 Redirect

Parameter	Type	Mandatory (Yes/No)	Description
Protocol	ProtocolEnum	No	**Explanation:** Protocol used for redirection. **Value range**: See Table 7-188. **Default value**: None
hostName	String	No	**Explanation:** Host name used for redirection. **Default value**: None
replaceKeyPrefix-With	String	No	**Explanation:** Object name prefix used in the redirection request. **Restrictions:** This parameter cannot be used together with **replaceKeyWith**. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
replaceKeyWith	String	No	**Explanation:** Object name used in the redirection request. **Restrictions:** This parameter cannot be used together with **replaceKeyPrefixWith**. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
httpRedirectCode	String	No	**Explanation:** HTTP status code in the response to the redirect request. **Default value**: None

Responses

Table 7-192 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

7.15.4 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.

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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).

Method

obsClient.getBucketWebsite(final **BaseBucketRequest request**)

Request Parameters

Table 7-193 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters for obtaining the hosting configuration. For details, see **Table 7-194**.

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Table 7-194 BaseBucketRequest

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

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Responses

Table 7-195 WebsiteConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
suffix	String	No	**Explanation:** Suffix that is appended to the request for a directory. For example, if the suffix is **index.html** and you request **samplebucket/images/**, the returned data will be for the object named **images/index.html** in the bucket **samplebucket**. **Value range**: This parameter can neither be left blank nor contain slashes (/). **Default value**: None
key	String	No	**Explanation:** Object name to use when a **4***XX* error occurs. This parameter specifies the web page to display when an error occurs. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
redirectAllRequestsTo	**RedirectAllRequest**	No	**Explanation:** Redirection rules for all requests. For details, see **Table 7-196**.
routeRules	List<**RouteRule**>	No	**Explanation:** List of routing rules. For details, see **Table 7-198**.

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Table 7-196 RedirectAllRequest

Parameter	Type	Mandatory (Yes/No)	Description
hostName	String	Yes	**Explanation:** Host name used for redirection, for example, **www.example.com**. **Restrictions:** The host name must comply with the host name rules. **Default value**: None
protocol	**ProtocolEnum**	No	**Explanation:** Protocol used for redirection. **Value range**: See **Table 7-197**. **Default value**: None

Table 7-197 ProtocolEnum

Constant	Default Value	Description
HTTP	http	HTTP protocol used for redirection.
HTTPS	https	HTTPS protocol used for redirection.

Table 7-198 RouteRule

Parameter	Type	Mandatory (Yes/No)	Description
condition	**RouteRuleCondition**	No	**Explanation:** Conditions of a redirection rule. For details, see **Table 7-199**.
redirect	**Redirect**	Yes	**Explanation:** Details about the redirection. For details, see **Table 7-200**.

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Table 7-199 RouteRuleCondition

Parameter	Type	Mandatory (Yes/No)	Description
keyPrefixEquals	String	No	**Explanation:** 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. For example, to redirect the requests for the object **ExamplePage.html**, set **keyPrefixEquals** to **ExamplePage.html**. **Restrictions:** This parameter cannot be used together with **httpErrorCodeReturnedEquals**. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
httpErrorCodeReturnedEquals	String	No	**Explanation:** 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. For example, if you want to redirect requests to **NotFound.html** when HTTP error code **404** is returned, set **httpErrorCodeReturnedEquals** to **404** in **RouteRuleCondition**, and set **replaceKeyWith** to **NotFound.html** in **Redirect**. **Restrictions:** This parameter cannot be used together with **keyPrefixEquals**. **Default value**: None

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Table 7-200 Redirect

Parameter	Type	Mandatory (Yes/No)	Description
Protocol	ProtocolEnum	No	**Explanation:** Protocol used for redirection. **Value range**: See Table 7-197. **Default value**: None
hostName	String	No	**Explanation:** Host name used for redirection. **Default value**: None
replaceKeyPrefix-With	String	No	**Explanation:** Object name prefix used in the redirection request. **Restrictions:** This parameter cannot be used together with **replaceKeyWith**. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
replaceKeyWith	String	No	**Explanation:** Object name used in the redirection request. **Restrictions:** This parameter cannot be used together with **replaceKeyPrefixWith**. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
httpRedirectCode	String	No	**Explanation:** HTTP status code in the response to the redirect request. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

7.15.5 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).

Method

obsClient.deleteBucketWebsite(final **BaseBucketRequest request**)

Request Parameters

Table 7-201 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters for deleting the hosting configuration. For details, see **Table 7-202**.

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Table 7-202 BaseBucketRequest

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

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Responses

Table 7-203 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        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();
        }
    }
}
```

7.16 Lifecycle Management (SDK for Java)

7.16.1 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

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7.16.2 Setting Lifecycle Rules (SDK for Java)

Function

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

- Periodically delete log files that are only meant to be retained for a specific period of time (a week or a month).
- Delete files that are frequently accessed within a certain period of time but are seldom accessed afterward. You can archive these files and then schedule the time for deletion.

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

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

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

- DeleteObject
- DeleteObjectVersion
- PutLifecycleConfiguration

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

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.
- You can configure up to 20 lifecycle rules 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).
- Expired objects will be permanently deleted and cannot be recovered.
- Multi-AZ redundancy is not available for storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the storage class based on a lifecycle rule.

Method

obsClient.setBucketLifecycle(final **SetBucketLifecycleRequest request**)

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Request Parameters

Table 7-204 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	SetBucketLifecycleRequest	Yes	**Explanation:** Request parameters for setting the lifecycle rule. For details, see **Table 7-205**.

Table 7-205 SetBucketLifecycleRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
lifecycleConfig	LifecycleConfiguration	Yes	**Explanation:** Lifecycle rules for the bucket. For details, see Table 7-206.

Table 7-206 LifecycleConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
rules	List<Rule>	No	**Explanation:** List of lifecycle rules. For details, see Table 7-207.

Table 7-207 Rule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	**Explanation:** Lifecycle rule ID. **Value range**: The value must contain 1 to 255 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	Yes	**Explanation:** 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. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you set **prefix** to **ExampleObject.jpg**, the rule applies to object **ExampleObject.jpg** only. If you set **prefix** to **logs/**, the rule applies to the three objects with names starting with **logs/**. If you leave **prefix** blank, the rule applies to all objects in the bucket. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
enabled	boolean	Yes	**Explanation:** Whether the rule is enabled. **Value range**: **true**: The rule is enabled. **false**: The rule is disabled. **Default value**: None
expiration	**Expiration**	No	**Explanation:** Expiration time of an object. For details, see **Table 7-209**. **Default value**: None
tagSet	**TagSet**	No	**Explanation:** Object tags that identify the objects the rule applies to. For details, see **Table 7-210**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
noncurrentVersio-nExpiration	**NoncurrentVersionExpiration**	No	**Explanation:** Expiration time of noncurrent object versions. For details, see **Table 7-211**. **Restrictions:** • This parameter is only available for noncurrent object versions. • Versioning must be enabled (or suspended after being enabled) for the bucket. **Default value**: None
transitions	List<**Transition**>	No	**Explanation:** Policies for storage class transition, including transition time and the storage class after transition. For details, see **Table 7-212**. **Restrictions:** This parameter is only available for the current object version. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
noncurrentVersionTransitions	List<**NoncurrentVersionTransition**>	No	**Explanation:** Policies for storage class transition of noncurrent versions, including transition time and the storage class after transition. For details, see **Table 7-214**. **Restrictions:** • This parameter is only available for noncurrent object versions. • Versioning must be enabled (or suspended after being enabled) for the bucket. **Default value**: None
abortIncomplete-MultipartUpload	**AbortIncompleteMultipartUpload**	No	**Explanation:** Expiration time for the parts (fragments) that are not assembled in a multipart upload. For details, see **Table 7-215**. **Restrictions:** **abortIncomplete-MultipartUpload** does not support filtering by tag. **Default value**: None

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Table 7-208 Tag

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	**Explanation:** Name of a tag. **Restrictions:** ● This parameter must not be left blank or contain unprintable ASCII characters (0–31) or the following special characters: *<>\= ● The tag keys in the same bucket must be unique. ● The value can be up to 36 characters long. **Default value**: None
value	String	Yes	**Explanation:** Tag value. **Restrictions:** ● This parameter can be left blank, but if specified, cannot include unprintable ASCII characters (0–31) and the following special characters: *<>\= ● The value can be up to 43 characters long. **Default value**: None

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Table 7-209 Expiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	Yes if **date** is absent during object storage class transition Yes if **date** or **expiredObjectDeleteMarker** is absent during object deletion	**Explanation:** Number of days (since the last update was made to the object) after which the lifecycle rule takes effect (the object will be deleted). **Restrictions:** This parameter is only available for the current object version. **Value range**: A positive integer, in days. **Default value**: None
date	Date	Yes if **days** is absent during object storage class transition. Yes if **days** or **expiredObjectDeleteMarker** is absent during object deletion	**Explanation:** The value must conform to the ISO8601 standards and indicate UTC 00:00. For example, **2018-01-01T00:00:00.000Z** indicates only objects that were last modified before the specified time are transitioned to the specified storage class or deleted. **Default value**: None
expiredObjectDeleteMarker	Boolean	Yes if **days** or **date** is absent	**Explanation:** Whether to delete expired delete markers. The value can be **true** or **false**. If tags are configured in a lifecycle rule, this element cannot be configured. **Default value**: None

Table 7-210 TagSet

Parameter	Type	Mandatory (Yes/No)	Description
tags	List<**Tag**>	Yes	**Explanation:** Object tag list. For details, see **Table 7-208**.

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Table 7-211 NoncurrentVersionExpiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	Yes	**Explanation:** Number of days an object is noncurrent before it expires. **Restrictions:** This parameter is only available for noncurrent object versions. **Value range**: A positive integer, in days. **Default value**: None

Table 7-212 Transition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if **date** is not configured.	**Explanation:** Number of days after its creation when the object is transitioned. **Restrictions:** This parameter is only available for the current object version. **Value range**: A positive integer, in days. **Default value**: None
date	Date	This parameter is mandatory if **days** is not configured.	**Explanation:** Date when the object will be transitioned. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
storageClass	StorageClassEnum	Yes	**Explanation:** Storage class to which the object is transitioned. **Restrictions:** Restrictions on storage class transitions: • Only transitions from the Standard storage class to the storage class are supported. To transition objects from to Standard, you must manually do it. • Only transitions from the Standard or storage class to the storage class are supported. To transition objects from to Standard or , you must first restore these objects and then manually change their storage classes. • Multi-AZ redundancy is not available for storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the storage class based on a lifecycle rule. **Value range**: See Table 7-213. **Default value**: None

Table 7-213 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 7-214 NoncurrentVersionTransition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if **date** is not configured.	**Explanation:** Number of days after its creation when the object is transitioned. **Restrictions:** This parameter is only available for noncurrent object versions. **Value range**: A positive integer, in days. **Default value**: None
storageClass	**StorageClassEnum**	Yes	**Explanation:** Storage class to which the object is transitioned. **Restrictions:** Restrictions on storage class transitions: • Only transitions from the Standard storage class to the storage class are supported. To transition objects from to Standard, you must manually do it. • Only transitions from the Standard or storage class to the storage class are supported. To transition objects from to Standard or , you must first restore these objects and then manually change their storage classes. • Multi-AZ redundancy is not available for storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the storage class based on a lifecycle rule. **Value range**: See **Table 7-213**. **Default value**: None

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Table 7-215 AbortIncompleteMultipartUpload

Parameter	Type	Mandatory (Yes/No)	Description
daysAfterInitiation	int	No	**Explanation:** Number of days since the initiation of an incomplete multipart upload that OBS will wait before deleting the parts that were not assembled (fragments). **Value range**: An integer greater than or equal to 0, in days. **Default value**: None

NOTE

Transitions, **Expiration**, **NoncurrentVersionTransitions**, **AbortIncompleteMultipartUpload**, and **NoncurrentVersionExpiration** must not be all left blank.

Responses

Table 7-216 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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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.
        // Enter the endpoint corresponding to the region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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");
            // Set the object tag as the condition for the lifecycle rule to take effect.
            // BucketTagInfo.TagSet tagSet = new BucketTagInfo.TagSet();
            // tagSet.addTag("key1", "value1");
            // tagSet.addTag("key2", "value2");
            // rule.setTagSet(tagSet);
            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 expire. To use this method, you need to import java.text.SimpleDateFormat.
            // 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");
```

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```
        } 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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. To use this method, you need to import java.text.SimpleDateFormat.
            // 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.
```

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```
            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();
        }
    }
}
```

7.16.3 Obtaining Lifecycle Rules (SDK for Java)

Function

You can configure lifecycle rules to periodically delete objects or transition objects between storage classes.

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).

Method

obsClient.getBucketLifecycle(final **BaseBucketRequest request**)

Request Parameters

Table 7-217 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameter for obtaining lifecycle rules. For details, see **Table 7-218**.

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Table 7-218 BaseBucketRequest

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

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Table 7-219 GetBucketLifecycleRequest

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

Responses

Table 7-220 LifecycleConfiguration

Parameter	Type	Description
rules	List<**Rule**>	**Explanation:** List of lifecycle rules. For details, see **Table 7-221**.

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

Table 7-221 Rule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	No	**Explanation:** Lifecycle rule ID. **Value range**: The value must contain 1 to 255 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	Yes	**Explanation:** 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. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you set **prefix** to **ExampleObject.jpg**, the rule applies to object **ExampleObject.jpg** only. If you set **prefix** to **logs/**, the rule applies to the three objects with names starting with **logs/**. If you leave **prefix** blank, the rule applies to all objects in the bucket. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
enabled	boolean	Yes	**Explanation:** Whether the rule is enabled. **Value range**: **true**: The rule is enabled. **false**: The rule is disabled. **Default value**: None
expiration	**Expiration**	No	**Explanation:** Expiration time of an object. For details, see **Table 7-223**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
tagSet	**TagSet**	No	**Explanation:** Object tags that identify the objects the rule applies to. For details, see **Table 7-224**. **Default value**: None
noncurrentVersionExpiration	**NoncurrentVersionExpiration**	No	**Explanation:** Expiration time of noncurrent object versions. For details, see **Table 7-225**. **Restrictions:** • This parameter is only available for noncurrent object versions. • Versioning must be enabled (or suspended after being enabled) for the bucket. **Default value**: None
transitions	List<**Transition**>	No	**Explanation:** Policies for storage class transition, including transition time and the storage class after transition. For details, see **Table 7-226**. **Restrictions:** This parameter is only available for the current object version. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
noncurrentVersionTransitions	List<NoncurrentVersionTransition>	No	**Explanation:** Policies for storage class transition of noncurrent versions, including transition time and the storage class after transition. For details, see Table 7-228. **Restrictions:** • This parameter is only available for noncurrent object versions. • Versioning must be enabled (or suspended after being enabled) for the bucket. **Default value**: None

Table 7-222 Tag

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	**Explanation:** Name of a tag. **Restrictions:** • This parameter must not be left blank or contain unprintable ASCII characters (0–31) or the following special characters: *<>\= • The tag keys in the same bucket must be unique. • The value can be up to 36 characters long. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
value	String	Yes	**Explanation:** Tag value. **Restrictions:** • This parameter can be left blank, but if specified, cannot include unprintable ASCII characters (0–31) and the following special characters: *<>\= • The value can be up to 43 characters long. **Default value**: None

Table 7-223 Expiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	Yes if **date** is absent during object storage class transition Yes if **date** or **expiredObjectDeleteMarker** is absent during object deletion	**Explanation:** Number of days (since the last update was made to the object) after which the lifecycle rule takes effect (the object will be deleted). **Restrictions:** This parameter is only available for the current object version. **Value range**: A positive integer, in days. **Default value**: None
date	Date	Yes if **days** is absent during object storage class transition. Yes if **days** or **expiredObjectDeleteMarker** is absent during object deletion	**Explanation:** The value must conform to the ISO8601 standards and indicate UTC 00:00. For example, **2018-01-01T00:00:00.000Z** indicates only objects that were last modified before the specified time are transitioned to the specified storage class or deleted. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
expiredObjectDeleteMarker	Boolean	Yes if **days** or **date** is absent	**Explanation:** Whether to delete expired delete markers. The value can be **true** or **false**. If tags are configured in a lifecycle rule, this element cannot be configured. **Default value**: None

Table 7-224 TagSet

Parameter	Type	Mandatory (Yes/No)	Description
tags	List<Tag>	Yes	**Explanation:** Object tag list. For details, see **Table 7-222**.

Table 7-225 NoncurrentVersionExpiration

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	Yes	**Explanation:** Number of days an object is noncurrent before it expires. **Restrictions:** This parameter is only available for noncurrent object versions. **Value range**: A positive integer, in days. **Default value**: None

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Table 7-226 Transition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if **date** is not configured.	**Explanation:** Number of days after its creation when the object is transitioned. **Restrictions:** This parameter is only available for the current object version. **Value range**: A positive integer, in days. **Default value**: None
date	Date	This parameter is mandatory if **days** is not configured.	**Explanation:** Date when the object will be transitioned. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
storageClass	StorageClassEnum	Yes	**Explanation:** Storage class to which the object is transitioned. **Restrictions:** Restrictions on storage class transitions: • Only transitions from the Standard storage class to the storage class are supported. To transition objects from to Standard, you must manually do it. • Only transitions from the Standard or storage class to the storage class are supported. To transition objects from to Standard or , you must first restore these objects and then manually change their storage classes. • Multi-AZ redundancy is not available for storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the storage class based on a lifecycle rule. **Value range**: See Table 7-227. **Default value**: None

Table 7-227 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 7-228 NoncurrentVersionTransition

Parameter	Type	Mandatory (Yes/No)	Description
days	Integer	This parameter is mandatory if **date** is not configured.	**Explanation:** Number of days after its creation when the object is transitioned. **Restrictions:** This parameter is only available for noncurrent object versions. **Value range**: A positive integer, in days. **Default value**: None
storageClass	**StorageClassEnum**	Yes	**Explanation:** Storage class to which the object is transitioned. **Restrictions:** Restrictions on storage class transitions: • Only transitions from the Standard storage class to the storage class are supported. To transition objects from to Standard, you must manually do it. • Only transitions from the Standard or storage class to the storage class are supported. To transition objects from to Standard or , you must first restore these objects and then manually change their storage classes. • Multi-AZ redundancy is not available for storage. For this reason, buckets or objects with multi-AZ redundancy cannot be transitioned to the storage class based on a lifecycle rule. **Value range**: See **Table 7-227**. **Default value**: None

Sample Code

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;
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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7.16.4 Deleting Lifecycle Rules (SDK for Java)

Function

You can configure lifecycle rules to periodically delete objects or transition objects between storage classes.

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).
- 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 7-229 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**BaseBucketRequest**	Yes	**Explanation:** Request parameters related to basic bucket information. For details, see **Table 7-230**.
request	**DeleteBucketLifecycleRequest**	No Either **DeleteBucketLifecycleRequest** or **BaseBucketRequest** must be used.	**Explanation:** Request parameters for deleting the lifecycle configuration of a bucket. For details, see **Table 7-231**. **Restrictions:** It is supported in 3.25.10 and later versions.

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Table 7-230 BaseBucketRequest

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

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Table 7-231 DeleteBucketLifecycleRequest

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

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Responses

Table 7-232 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Delete the lifecycle configurations.
```

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```
            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();
        }
    }
}
```

7.17 Versioning (SDK for Java)

7.17.1 Overview (SDK for Java)

You can use versioning to store multiple versions of an object in a bucket.

When versioning is enabled for a bucket, OBS keeps multiple versions of an object in the bucket, allowing you to easily retrieve and restore historical versions or recover data in the event of accidental changes or application failures.

By default, versioning is disabled for new OBS buckets. In this case, if a newly uploaded object is using the name of the previously uploaded one, the new object will overwrite the previous one.

7.17.2 Configuring Versioning for a Bucket (SDK for Java)

Function

You can enable versioning to automatically maintain previous versions of an object. When versioning is enabled, you can access earlier versions of an object to recover your data in the event of accidental actions or application failures.

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).

Method

obsClient.setBucketVersioning(final **SetBucketVersioningRequest request**)

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Request Parameters

Table 7-233 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**SetBucketVersioningRequest**	Yes	**Explanation:** Request parameters for bucket versioning configuration. For details, see **Table 7-234**.

Table 7-234 SetBucketVersioningRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
status	**VersioningStatusEnum**	Yes	**Explanation:** Versioning status of the bucket. **Value range**: See **Table 7-235**.

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Table 7-235 VersioningStatusEnum

Constant	Default Value	Description
SUSPENDED	Suspended	Versioning is suspended.
ENABLED	Enabled	Versioning is enabled.

Responses

Table 7-236 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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.
```

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```
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

7.17.3 Obtaining the Versioning Status of a Bucket (SDK for Java)

Function

You can enable versioning to automatically maintain previous versions of an object. When versioning is enabled, you can access earlier versions of an object to recover your data in the event of accidental actions or application failures.

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).

Method

obsClient.getBucketVersioning(final **BaseBucketRequest request**)

Request Parameters

Table 7-237 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	BaseBucketRequest	Yes	**Explanation:** Request parameters for viewing the versioning status of a bucket. For details, see **Table 7-238**.

Table 7-238 BaseBucketRequest

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

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Responses

Table 7-239 BucketVersioningConfiguration

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
status	**VersioningStatusEnum**	**Explanation:** Versioning status of the bucket. **Value range**: See **Table 7-240**.

Table 7-240 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");
```

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```
        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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

7.18 Write-Once-Read-Many (WORM) (SDK for Java)

7.18.1 Configuring a Default WORM Policy for a Bucket (SDK for Java)

Function

This API is used to configure a default WORM policy and retention period for a bucket.

With a bucket's default WORM policy, if you do not specify a protection policy or retention period when you upload an object to the bucket, the default policy will be automatically applied to the newly uploaded object. An object-level WORM policy requires configuring a specific date, which indicates that an object will be protected until that date. For a default bucket-level WORM policy, a retention period is required, and the protection for an object starts when the object is uploaded to the bucket.

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NOTE

- You can modify or even delete the default WORM policy of a bucket. The change applies only to the objects uploaded after the change, but not to those uploaded before.
- During a multipart upload, the object parts uploaded are not protected before they are assembled. After object parts are assembled, the new object is protected by the default bucket-level WORM policy. You can also configure an object-level WORM policy for the new object.

Restrictions

- To configure a default WORM policy for a bucket, you must be the bucket owner or have the required permission (**obs:bucket:PutBucketObjectLockConfiguration** granted using IAM or **PutBucketObjectLockConfiguration** granted using a bucket policy).
- The WORM mode can only be **COMPLIANCE**.
- The retention period can be set to 1 to 36500 days or 1 to 100 years.

Method

obsClient.setObjectLockConfiguration(SetObjectLockConfigurationRequest request)

Request Parameters

Table 7-241 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-242	Yes	**Explanation:** Request parameters for configuring a default WORM policy for a bucket. For details, see Table 7-242.

Table 7-242 SetObjectLockConfigurationRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value:** None
objectLockConfiguration	**Table 7-243**	Yes	**Explanation:** WORM policy configuration. For details, see **Table 7-243**.

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Table 7-243 ObjectLockConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
objectLockEnabled	String	Yes	**Explanation:** Bucket-level WORM status **Restrictions:** N/A **Value range:** **Enabled**: Bucket-level WORM is enabled. **Default value:** N/A
rule	**Table 7-244**	Yes when **objectLockEnabled** is set to **Enabled**. If this parameter is not specified, the default bucket-level WORM policy will be cleared.	**Explanation:** Rules of a bucket-level WORM policy **Restrictions:** If this parameter is not specified, the default bucket-level WORM policy will be cleared. **Value range:** For details, see **Table 7-244**. **Default value:** N/A

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Table 7-244 ObjectLockRule

Parameter	Type	Mandatory (Yes/No)	Description
defaultRetention	Table 7-245	No	**Explanation:** Default bucket-level WORM policy **Restrictions:** None **Value range:** For details, see Table 7-245. **Default value:** None

Table 7-245 DefaultRetention

Parameter	Type	Mandatory (Yes/No)	Description
mode	String	Yes	**Explanation:** WORM retention policy of a bucket **Restrictions:** N/A **Value range:** **COMPLIANCE**: compliance mode **Default value:** **COMPLIANCE**
days	int	Either **days** or **years** must be specified, but they cannot be specified at the same time.	**Explanation:** Retention period, in days **Restrictions:** Only one of **days** and **years** can be set to a value other than 0. The value must be within the allowed range. **Value range:** 1 to 36500 **Default value:** N/A

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Parameter	Type	Mandatory (Yes/No)	Description
years	int	Either **days** or **years** must be specified, but they cannot be specified at the same time.	**Explanation:** Default retention period, in years **Restrictions:** • One year is considered as 365 days, regardless of the leap year. • Only one of **days** and **years** can be set to a value other than 0. The value must be within the allowed range. **Value range:** 1 to 100 **Default value:** N/A

Responses

Table 7-246 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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Sample Code

This example configures a default WORM policy for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
import com.obs.services.exception.ObsException;
import com.obs.services.model.objectlock.DefaultRetention;
import com.obs.services.model.objectlock.ObjectLockConfiguration;
import com.obs.services.model.objectlock.ObjectLockRule;
import com.obs.services.model.objectlock.SetObjectLockConfigurationRequest;
public class SetObjectLockConfiguration {
    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 not advised 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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        String endPoint = System.getenv("ENDPOINT");
        ObsConfiguration obsConfiguration = new ObsConfiguration();
        obsConfiguration.setEndPoint(endPoint);
        ObsClient obsClient = new ObsClient(ak, sk, securityToken, obsConfiguration);
        try {
            String exampleBucket = "examplebucket";
            DefaultRetention retention = new DefaultRetention("COMPLIANCE", 30, null);
            ObjectLockRule rule = new ObjectLockRule(retention);
            ObjectLockConfiguration config = new ObjectLockConfiguration("Enabled", rule);
            SetObjectLockConfigurationRequest request = new SetObjectLockConfigurationRequest(exampleBucket, config);
            obsClient.setObjectLockConfiguration(request);
            System.out.println("SetObjectLockConfiguration successfully");
        } catch (ObsException e) {
            System.out.println("SetObjectLockConfiguration 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("SetObjectLockConfiguration failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.18.2 Obtaining the Default WORM Policy of a Bucket (SDK for Java)

Function

This API is used to obtain the default WORM policy of a bucket.

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NOTE

If you have never configured the default bucket-level retention policy after enabling WORM for a bucket, you can still use this API to check whether WORM is enabled.

Restrictions

- To obtain the default WORM policy of a bucket, you must be the bucket owner or have the required permission (**obs:bucket:GetBucketObjectLockConfiguration** granted using IAM or **GetBucketObjectLockConfiguration** granted using a bucket policy).

Method

obsClient.getObjectLockConfiguration(GetObjectLockConfigurationRequest request)

Request Parameters

Table 7-247 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-248	Yes	**Explanation:** Request parameters for obtaining the default WORM policy of a bucket. For details, see Table 7-248.

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Table 7-248 GetObjectLockConfigurationRequest

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

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Responses

Table 7-249 GetBucketTrashResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code **Value range:** A status code is a group of digits indicating the status of a response. It ranges from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). **Default value:** None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value:** None
objectLockConfiguration	**Table 7-250**	**Explanation:** WORM policy configuration. For details, see **Table 7-250**.

Table 7-250 ObjectLockConfiguration

Parameter	Type	Description
objectLockEnabled	String	**Explanation:** Bucket-level WORM status **Value range:** **Enabled**: Bucket-level WORM is enabled.
rule	**Table 7-251**	**Explanation:** Rules of a bucket-level WORM policy. For details, see **Table 7-251**.

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Table 7-251 ObjectLockRule

Parameter	Type	Description
defaultRetention	Table 7-252	**Explanation:** Default bucket-level WORM policy. For details, see Table 7-252.

Table 7-252 DefaultRetention

Parameter	Type	Description
mode	String	**Explanation:** WORM retention policy of a bucket
days	int	**Explanation:** Retention period, in days
years	int	**Explanation:** Default retention period, in years

Sample Code

This example obtains the default WORM policy of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
import com.obs.services.exception.ObsException;
import com.obs.services.model.objectlock.DefaultRetention;
import com.obs.services.model.objectlock.GetObjectLockConfigurationRequest;
import com.obs.services.model.objectlock.GetObjectLockConfigurationResult;
import com.obs.services.model.objectlock.ObjectLockConfiguration;
public class GetObjectLockConfiguration {
    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 not advised 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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        String endPoint = System.getenv("ENDPOINT");
        ObsConfiguration obsConfiguration = new ObsConfiguration();
        obsConfiguration.setEndPoint(endPoint);
        ObsClient obsClient = new ObsClient(ak, sk, securityToken, obsConfiguration);
        try {
            String exampleBucket = "examplebucket";
            GetObjectLockConfigurationRequest request = new GetObjectLockConfigurationRequest(exampleBucket);
            GetObjectLockConfigurationResult result = obsClient.getObjectLockConfiguration(request);
            ObjectLockConfiguration config = result.getObjectLockConfiguration();
            System.out.println("GetObjectLockConfiguration successfully");
            System.out.println("ObjectLockEnabled: " + config.getObjectLockEnabled());
```

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```
            if (config.getRule() != null) {
                DefaultRetention retention = config.getRule().getDefaultRetention();
                System.out.println("Mode: " + retention.getMode());
                System.out.println("Days: " + retention.getDays());
                System.out.println("Years: " + retention.getYears());
            }
        } catch (ObsException e) {
            System.out.println("GetObjectLockConfiguration 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("GetObjectLockConfiguration failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.19 Online Decompression Policies (SDK for Java)

7.19.1 Configuring an Online Decompression Policy (SDK for Java)

Function

OBS can automatically decompress uploaded ZIP packages and save them to a specified directory. If any ZIP package uploaded to a bucket matches the configured decompression policy, the package will be automatically decompressed to the specified directory. You can call this API to configure a ZIP file decompression policy for a bucket.

Online decompression is not available for fusion buckets.

Restrictions

Permissions

- To configure, obtain, or delete online decompression policies, you must have the **Tenant Administrator** permission assigned by using role/policy-based authorization of IAM.
- Online decompression requires that you create an IAM agency to delegate OBS to access data in the bucket. The permissions the agency should assign to OBS include **obs:object:PutObject**, **obs:object:GetObject**, and **obs:object:AbortMultipartUpload**.

Package and file size

- A single ZIP package cannot exceed **1 GB** in size.
- A single ZIP package can contain a maximum of 65,536 files.

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- A single decompressed file cannot exceed 40 GB in size.

Time

- Decompressing a ZIP package takes 10 minutes at most.

Functions

- Currently, only ZIP packages are supported.
- ZIP package names cannot contain Chinese punctuation marks, special codes, or special characters such as \/:*?"<>|@#¥
- To decompress the ZIP package that contains other ZIP packages, the event type of the online decompression policy must be set to **ObjectCreated:*** or **ObjectCreated:CompleteMultipartUpload**.
- Currently, no notification will be sent to users after decompression tasks are complete.
- Currently, only deflate-compressed ZIP packages can be decompressed. Deflate is different from the compression algorithms (such as Store and Normal) provided by WinRAR.
- The total length of the decompression path plus the name of any decompressed file cannot exceed 512 characters.
- Currently, encrypted ZIP packages cannot be decompressed.
- Federated users cannot use online decompression. For more information about federated users, see and .

Method

obsClient.setBucketCompressPolicy(SetBucketCompressPolicyRequest request)

Request Parameters

Table 7-253 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-254	Yes	**Explanation:** Request parameters for configuring the online decompression policy. For details, see Table 7-254.

Table 7-254 SetBucketCompressPolicyRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value:** None
compressPolicyConfiguration	Table 7-255	Yes	**Explanation:** Number of policy rules. For details, see Table 7-255.

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Table 7-255 CompressPolicyConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
rules	List<**Table 7-256**>	Yes	**Explanation:** Number of policy rules. For details, see **Table 7-256**. **Restrictions:** For the same bucket, prefixes of different rules cannot be the same or contain each other. The same agency is recommended. **Value range:** 1 to 10 **Default value:** None

Table 7-256 CompressPolicyRule

Parameter	Type	Mandatory (Yes/No)	Description
id	String	Yes	**Explanation:** Name of a decompression rule. It is the unique ID of the decompression rule configured for the current bucket, for example, **event_0001**. **Restrictions:** • It consists of only uppercase letters, lowercase letters, digits, underscores (_), and hyphens (-). • The total length of the decompression rule name, decompression path, and IAM agency name cannot exceed 800 characters. **Value range:** The value can be up to 256 characters long. **Default value:** None

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Parameter	Type	Mandatory (Yes/No)	Description
project	String	Yes	**Explanation:** Project ID **Value range:** N/A **Default value:** None
agency	String	Yes	**Explanation:** IAM agency name **Restrictions:** • The permissions the agency should assign to OBS include **obs:object:PutObject**, **obs:object:GetObject** and **obs:object:AbortMultipartUpload**. • The total length of the decompression rule name, decompression path, and IAM agency name cannot exceed 800 characters. **Default value:** None
events	List<String>	Yes	**Explanation:** Trigger event type **Value range:** **["ObjectCreated:*"]** **["ObjectCreated:Put"]** **["ObjectCreated:Post"]** **["ObjectCreated:Copy"]** **["ObjectCreated:CompleteMultipartUpload"]** **Default value:** None

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Parameter	Type	Mandatory (Yes/No)	Description
suffix	String	Yes	**Explanation:** Suffix defined in the rule **Restrictions:** Currently, only **.zip** is supported. **Value range:** **.zip** **Default value:** None
prefix	String	No	**Explanation:** Prefix defined in the rule **Value range:** The value can be up to 1,023 characters long. **Default value:** None
overwrite	int	Yes	**Explanation:** Method of processing a decompressed file if it has the same name as an existing file **Value range:** ● **0**: Skip without overwriting. ● **1**: Do not overwrite (rename the file with the CRC32 value). ● **2**: Overwrite the existing file. **Default value:** None

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Parameter	Type	Mandatory (Yes/No)	Description
decompresspath	String	No	**Explanation:** Path for storing decompressed files **Restrictions:** • If the value is not empty, it must end with a slash (/) but cannot start with a slash (/). • The total length of the decompression rule name, decompression path, and IAM agency name cannot exceed 800 characters. **Value range:** The value can be up to 800 characters long. **Default value:** None
policytype	String	Yes	**Explanation:** Type of the decompression policy **Restrictions:** Currently, only **decompress** is supported. **Value range:** **decompress** **Default value:** **decompress**

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Responses

Table 7-257 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Sample Code

This example configures an online decompression policy for bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
import com.obs.services.exception.ObsException;
import com.obs.services.model.compress.CompressPolicyConfiguration;
import com.obs.services.model.compress.CompressPolicyRule;
import com.obs.services.model.compress.SetBucketCompressPolicyRequest;
import java.util.Arrays;
import java.util.List;
public class SetBucketCompressPolicy {
    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 not advised 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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        String endPoint = System.getenv("ENDPOINT");
        ObsConfiguration obsConfiguration = new ObsConfiguration();
        obsConfiguration.setEndPoint(endPoint);
        ObsClient obsClient = new ObsClient(ak, sk, securityToken, obsConfiguration);
```

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```
        try {
            String exampleBucket = "examplebucket";
            String ruleId = "rule-001";
            String projectId = "your_project_id";
            // The permissions the agency should assign to OBS include obs:object: PutObject, obs:
object:GetObject and obs: object:AbortMultipartUpload.
            String agency = "your_agency";
            // Trigger event type
            List<String> events = Arrays.asList("ObjectCreated:*");
            // Suffix defined in the rule
            String suffix = ".zip";
            // Method of processing decompressed files with the same names as existing files
            Integer overwrite = 0;
            CompressPolicyRule rule = new CompressPolicyRule(ruleId, projectId, agency, events, suffix,
overwrite);
            // Prefix defined in the rule
            rule.setPrefix("decompress/");
            // Path for storing decompressed files
            rule.setDecompresspath("after-decompress/");
            // Type of the file decompression policy. Currently, only decompress is supported.
            rule.setPolicytype("decompress");
            List<CompressPolicyRule> rules = Arrays.asList(rule);
            CompressPolicyConfiguration config = new CompressPolicyConfiguration(rules);
            SetBucketCompressPolicyRequest setRequest =
                new SetBucketCompressPolicyRequest(exampleBucket, config);
            obsClient.setBucketCompressPolicy(setRequest);
            System.out.println("SetBucketCompressPolicy successfully");
        } catch (ObsException e) {
            System.out.println("SetBucketCompressPolicy 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("SetBucketCompressPolicy failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

7.19.2 Obtaining an Online Decompression Policy (SDK for Java)

Function

This API is used to query the file decompression policy of a specified bucket. If the policy exists, a success message is returned with status code 200.

Restrictions

- To configure, obtain, or delete online decompression policies, you must have the **Tenant Administrator** permission assigned by using role/policy-based authorization of IAM.
- Online decompression requires that you create an IAM agency to delegate OBS to access data in the bucket. The permissions the agency should assign to OBS include **obs:object:PutObject**, **obs:object:GetObject**, and **obs:object:AbortMultipartUpload**.

Method

obsClient.getBucketCompressPolicy(GetBucketCompressPolicyRequest request)

Request Parameters

Table 7-258 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-259	Yes	**Explanation:** Request parameters for obtaining the online decompression policy. For details, see **Table 7-259**.

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Table 7-259 GetBucketCompressPolicyRequest

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

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Responses

Table 7-260 GetBucketTrashResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code **Value range:** A status code is a group of digits indicating the status of a response. It ranges from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). **Default value:** None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value:** None
compressPolicyConfiguration	**Table 7-261**	**Explanation:** Number of policy rules. For details, see **Table 7-261**.

Table 7-261 CompressPolicyConfiguration

Parameter	Type	Description
rules	List<**Table 7-262**>	**Explanation:** Number of policy rules. For details, see **Table 7-262**. **Restrictions:** For the same bucket, prefixes of different rules cannot be the same or contain each other. The same agency is recommended. **Value range:** 1 to 10 **Default value:** None

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Table 7-262 CompressPolicyRule

Parameter	Type	Description
id	String	**Explanation:** Name of a decompression rule. It is the unique ID of the decompression rule configured for the current bucket, for example, **event_0001**.
project	String	**Explanation:** Project ID
agency	String	**Explanation:** IAM agency name
events	List<String>	**Explanation:** Trigger event type **Value range:** **["ObjectCreated:*"]** **["ObjectCreated:Put"]** **["ObjectCreated:Post"]** **["ObjectCreated:Copy"]** **["ObjectCreated:CompleteMultipartUpload"]**
suffix	String	**Explanation:** Suffix defined in the rule
prefix	String	**Explanation:** Prefix defined in the rule
overwrite	int	**Explanation:** Method of processing a decompressed file if it has the same name as an existing file **Value range:** • **0**: Skip without overwriting. • **1**: Do not overwrite (rename the file with the CRC32 value). • **2**: Overwrite the existing file.
decompresspath	String	**Explanation:** Path for storing decompressed files
policytype	String	**Explanation:** Type of the decompression policy **Value range:** **decompress**

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Sample Code

This example obtains the online decompression policy of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
import com.obs.services.exception.ObsException;
import com.obs.services.model.compress.CompressPolicyRule;
import com.obs.services.model.compress.GetBucketCompressPolicyRequest;
import com.obs.services.model.compress.GetBucketCompressPolicyResult;
public class GetBucketCompressPolicy {
    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 not advised 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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        String endPoint = System.getenv("ENDPOINT");
        ObsConfiguration obsConfiguration = new ObsConfiguration();
        obsConfiguration.setEndPoint(endPoint);
        ObsClient obsClient = new ObsClient(ak, sk, securityToken, obsConfiguration);
        try {
            String exampleBucket = "examplebucket";
            GetBucketCompressPolicyResult result =
                obsClient.getBucketCompressPolicy(new GetBucketCompressPolicyRequest(exampleBucket));
            System.out.println("GetBucketCompressPolicy successfully");
            for (CompressPolicyRule rule : result.getCompressPolicyConfiguration().getRules()) {
                System.out.println("Rule Id:"+ rule.getId());
                System.out.println("Project Id:"+ rule.getProject());
                System.out.println("Agency:"+ rule.getAgency());
                System.out.println("Events:"+ rule.getEvents());
                System.out.println("Prefix:"+ rule.getPrefix());
                System.out.println("Suffix:"+ rule.getSuffix());
                System.out.println("Overwrite:"+ rule.getOverwrite());
                System.out.println("Decompress Path:"+ rule.getDecompresspath());
                System.out.println("Policy Type:"+ rule.getPolicytype());
            }
        } catch (ObsException e) {
            System.out.println("GetBucketCompressPolicy 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("GetBucketCompressPolicy failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

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7.19.3 Deleting an Online Decompression Policy (SDK for Java)

Function

This API is used to delete the online decompression policy configured for a specified bucket. If the deletion is successful, the status code 204 is returned.

Method

obsClient.deleteBucketCompressPolicy(DeleteBucketCompressPolicyRequest request)

Request Parameters

Table 7-263 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	Table 7-264	Yes	**Explanation:** Request parameters for deleting an online decompression policy. For details, see Table 7-264.

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Table 7-264 DeleteBucketCompressPolicyRequest

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

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Responses

Table 7-265 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Sample Code

This example deletes the online decompression policy of bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
import com.obs.services.exception.ObsException;
import com.obs.services.model.compress.DeleteBucketCompressPolicyRequest;
public class DeleteBucketCompressPolicy {
    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 not advised 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. CN North-Beijing4 is used here as an example. Replace it with the one currently in use.
        // Obtain an endpoint using environment variables or import it in other ways.
        String endPoint = System.getenv("ENDPOINT");
        ObsConfiguration obsConfiguration = new ObsConfiguration();
        obsConfiguration.setEndPoint(endPoint);
        ObsClient obsClient = new ObsClient(ak, sk, securityToken, obsConfiguration);
        try {
            String exampleBucket = "examplebucket";
            DeleteBucketCompressPolicyRequest deleteRequest =
                new DeleteBucketCompressPolicyRequest(exampleBucket);
            obsClient.deleteBucketCompressPolicy(deleteRequest);
```

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```
            System.out.println("DeleteBucketCompressPolicy successfully");
        } catch (ObsException e) {
            System.out.println("DeleteBucketCompressPolicy 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("DeleteBucketCompressPolicy failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8 Object APIs (SDK for Java)

8.1 Basic Operations (SDK for Java)

8.1.1 Object Upload (SDK for Java)

8.1.1.1 Overview (SDK for Java)

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.

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8.1.1.2 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 a file no larger than 5 GB in streaming mode. 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).
- 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	**PutObjectRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-2**.

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Table 8-2 PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	ObjectMetadata	No	**Explanation:** Object metadata. For details, see Table 8-4. **Default value**: None
acl	AccessControlList	No	**Explanation:** ACL that can be pre-defined when an object is created. Refer to Table 8-6 to choose the option you need. **Value range**: • To use a pre-defined ACL, see Table 8-3 for the available options. • To use a user-defined ACL, see Table 8-6 to configure the required parameters. **Default value**: None
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-5**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call. **Value range**: An integer greater than 0, in days. **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 8-12**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-3 Pre-defined 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 abort 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.

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Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 8-4 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.

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Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** ● The MD5 value of the object must be Base64 encoded. ● If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
storageClass	StorageClassEnum	No	**Explanation:** 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. **Value range**: See Table 8-15. **Default value**: None
webSiteRedirectLocation	String	No	**Explanation:** If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to. To another object in the same bucket: **WebsiteRedirectLocation:/anotherPage.html** To an external URL: **WebsiteRedirectLocation:http://www.example.com/** **Restrictions:** • The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. • OBS only supports redirection for objects in the root directory of a bucket. **Default value**: None
nextPosition	long	No	**Explanation:** Start position for the next append upload. **Value range**: 0 to the object length, in bytes. **Default value**: None

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

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.

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Constant	Description
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	Mandatory (Yes/No)	Description
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-10**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-7**.

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Table 8-7 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-8**. Grantee (user group) information. For details, see **Table 8-9**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-11**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-8 CanonicalGrantee

Parameter	Type	Mandatory (Yes/No)	Description
grantId	String	Yes if **Type** is set to **Grantee User**	**Explanation:** Account (domain) ID of the grantee. **Value range**: To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the grantee. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-9 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 8-10 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-11 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.
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.

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Constant	Default Value	Description
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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

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Table 8-12 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used to obtain the upload progress. For details, see **Table 8-13**. **Default value**: None

Table 8-13 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-14**. **Default value**: None

Table 8-14 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Table 8-15 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Responses

Table 8-16 PutObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** Object storage class. If the storage class is Standard, leave this parameter blank. **Value range**: See **Table 8-15**. **Default value**: None

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Parameter	Type	Description
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version ID will be returned. **Value range**: The value must contain 32 characters. **Default value**: None
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An object created by an upload or copy operation has a unique ETag. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

Sample Code: Uploading a Character String

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
```

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

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

Sample Code: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

Sample Code: Uploading a File Stream

The following code uses two methods to upload a local file stream to the **dir** directory of bucket **examplebucket**: directly calling **ObsClient.putObject** to upload **localfile** to **dir/objectname**, and using **PutObjectRequest** to upload **localfile2** to **dir/objectname2**.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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.
            try (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.
            try (FileInputStream fis2 = new FileInputStream(new File("localfile2"))) {
                PutObjectRequest request = new PutObjectRequest();
                request.setBucketName("examplebucket");
                request.setObjectKey("objectname2");
                request.setInput(fis2);
```

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```
            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());
    } catch (Exception e) {
        System.out.println("putObject failed");
        // Print other error information.
        e.printStackTrace();
    }
  }
}
```

Sample Code: Uploading a Base64-encoded Image

This example uploads the string stream of a Base64-encoded image.

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

import java.io.ByteArrayInputStream;
import java.util.Base64;
public class PutObject013 {
    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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String bucketName = "examplebucket";
            // Base64-encoded image content
            String pictureContent = "*******";
            // Extract the Base64 part and remove the data URI prefix.
            String base64Data = pictureContent.substring(pictureContent.indexOf(",") + 1);
            // Decode the Base64-encoded string into a binary stream and upload it.
            ByteArrayInputStream pngStream = new ByteArrayInputStream(Base64.getDecoder().decode(base64Data));
            PutObjectRequest putObjectRequest = new PutObjectRequest(bucketName, "testBase64Png.png", pngStream);
            obsClient.putObject(putObjectRequest);
            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());
        } catch (Exception e) {
            System.out.println("putObject failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8.1.1.3 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).
- 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.

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.

Method

obsClient.putObject(**PutObjectRequest request**)

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Request Parameters

Table 8-17 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	PutObjectRequest	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-18**.

Table 8-18 PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	ObjectMetadata	No	**Explanation:** Object metadata. For details, see Table 8-29. **Default value**: None
acl	AccessControlList	No	**Explanation:** ACL that can be pre-defined when an object is created. Refer to Table 8-23 to choose the option you need. **Value range**: • To use a pre-defined ACL, see Table 8-31 for the available options. • To use a user-defined ACL, see Table 8-23 to configure the required parameters. **Default value**: None
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-22**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call. **Value range**: An integer greater than 0, in days. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
needCalculateCRC64	boolean	No	**Explanation:** Whether to automatically calculate the CRC64 value of the data to be uploaded and submit the CRC64 value to the server for verification. **Restrictions:** This parameter is not supported for POSIX or SFS objects. This parameter is supported only for file uploads. **Value range:** **true**: The SDK calculates CRC64 and submits it to the server for verification. **false**: CRC64 is not calculated. **Default value:** **false**
progressListener	**Progress Listener**	No	**Explanation:** Upload progress. For details, see **Table 8-19**.
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

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Table 8-19 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-20**. **Default value**: None

Table 8-20 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** **Progress status**. For details, see **Obtaining the Upload Progress (SDK for Java)**. **Default value**: None

Table 8-21 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Table 8-22 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.

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

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Table 8-23 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-24**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-25**.

Table 8-24 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-25 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-27**. Grantee (user group) information. For details, see **Table 8-28**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-26**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 8-26 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 8-27 CanonicalGrantee

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

Table 8-28 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Table 8-29 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the object must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-30**. **Default value**: None

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

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

Table 8-30 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Table 8-31 Pre-defined ACL

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

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Constant	Description
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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

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Constant	Description
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Responses

Table 8-32 PutObjectResult

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

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Parameter	Type	Description
storageClass	StorageClassEnum	**Explanation:** 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. **Value range**: See **Table 8-30**. **Default value**: None
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version ID will be returned. **Value range**: The value must contain 32 characters. **Default value**: None
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An object created by an upload or copy operation has a unique ETag. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
bucketName	String	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None

Code Examples

This example uploads a local file to bucket **examplebucket**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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("objectname");
            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();
        }
    }
}
```

8.1.1.4 Obtaining the Upload Progress (SDK for Java)

Function

You can call **PutObjectRequest.setProgressListener** to set a data transmission listener to obtain the upload progress of a specified object.

Restrictions

- To obtain the upload progress, you must have the **obs:object:PutObject** permission.
- You can query the upload progress when uploading an object in streaming, file-based, multipart, appendable, or resumable mode.

- If **-1** is returned for **ProgressStatus.getTransferPercentage()**, the object is uploaded in streaming mode and the object length (**Content-Length**) is not set. To obtain the upload progress, you must set **Content-Length**.

Method

PutObjectRequest.setProgressListener(**ProgressListener progressListener**)

Request parameters

Table 8-33 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	**Progress Listener**	Yes	**Explanation:** Data transmission listener for obtaining the upload progress. For details, see **Table 8-34**.

Table 8-34 ProgressListener method (transmission progress listener)

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-35**.

Table 8-35 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	**ProgressStatus**	Yes	**Explanation:** Progress data. For details, see **Table 8-36**.

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Table 8-36 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Code Examples

This example uploads local file **exampleLocalFilePath** to bucket **examplebucket** as object **exampleobject** and uses **ProgressListener** to obtain and print the upload progress.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

This example returns the progress of uploading local file **exampleFileName** in a stream to bucket **examplebucket** as object **objectname**.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectMetadata;
import com.obs.services.model.ProgressListener;
import com.obs.services.model.ProgressStatus;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
import java.io.FileInputStream;
public class PutObjectByInputStreamWithProgress {
    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.
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");
        String endPoint = "https://obs.region.example.com";
        ObsConfiguration obsConfiguration = new ObsConfiguration();
        obsConfiguration.setEndPoint(endPoint);
        // Create an ObsClient instance.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String exampleBucket = "examplebucket";
```

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```
        String exampleObject = "objectname";
        String fileToUpload = "exampleFileName";
        long contentLength = new File(fileToUpload).length();
        // Use try-with-resources to wrap FileInputStream to ensure that the stream is automatically
closed.
        try (FileInputStream fis = new FileInputStream(fileToUpload)) {
            PutObjectRequest request = new PutObjectRequest(exampleBucket, exampleObject, fis);
            ObjectMetadata objectMetadata = new ObjectMetadata();
            // For streaming upload, the object length (Content-Length) must be set in the object properties.
            // Otherwise, -1 is returned for ProgressStatus.getTransferPercentage().
            objectMetadata.setContentLength(contentLength);
            request.setMetadata(objectMetadata);
            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 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());
    } catch (Exception e) {
        System.out.println("putObject failed");
        // Print other error information.
        e.printStackTrace();
    }
  }
}
```

8.1.1.5 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 name 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.

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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).
- 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** (Cold), 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 8-37 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**AppendObjectRequest**	Yes	**Explanation:** Request parameters for an append upload. For details, see **Table 8-38**.

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Table 8-38 AppendObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	**ObjectMetadata**	No	**Explanation:** Object metadata. For details, see **Table 8-45**. **Default value**: None
acl	**AccessControlList**	No	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see **Table 8-39** for the available options. • To use a user-defined ACL, see **Table 8-46** to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-43**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call. **Value range**: An integer greater than 0, in days. **Default value**: None
needCalculateCRC64	boolean	No	**Explanation:** Whether to automatically calculate the CRC64 value of the data to be uploaded and submit the CRC64 value to the server for verification. **Restrictions:** This parameter is not supported for POSIX or SFS objects. This parameter is supported only for file uploads. This parameter is supported only for the first append upload. **Value range:** **true**: The SDK calculates CRC64 and submits it to the server for verification. **false**: CRC64 is not calculated. **Default value:** false
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 8-40**.

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Parameter	Type	Mandatory (Yes/No)	Description
position	long	Yes	**Explanation:** Position where the object data is appended. **Restrictions:** For an object to be appended, the value of **position** must be set to **0** when the object is uploaded for the first time. The value of **position** will be carried in the **x-obs-next-append-position** header of the response returned by the server when the object is successfully uploaded next time. **Default value**: None
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-39 Pre-defined 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.

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Constant	Description
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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

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Table 8-40 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-41**. **Default value**: None

Table 8-41 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-42**. **Default value**: None

Table 8-42 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Table 8-43 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.

Constant	Default Value
AES256	AES256

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Table 8-44 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-45 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** MIME type of the object. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the file. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-44**. **Default value**: None

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

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

Table 8-46 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-47**.

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Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-48**.

Table 8-47 Owner

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

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Table 8-48 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-50**. Grantee (user group) information. For details, see **Table 8-51**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-49**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-49 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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Table 8-50 CanonicalGrantee

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

Table 8-51 GroupGrantee

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

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Responses

Table 8-52 AppendObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

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Parameter	Type	Description
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An object created by an upload or copy operation has a unique ETag. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
storageClass	**StorageClass Enum**	**Explanation:** 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. **Value range**: See **Table 8-44**. **Default value**: None
nextPosition	long	**Explanation:** Position from which the next append upload starts **Default value**: None

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;
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // 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();
        }
    }
}
```

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8.1.1.6 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).
- The total size of the file to be uploaded using the resumable upload API must be at least 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 8-53 uploadFile

Parameter	Type	Mandatory (Yes/No)	Description
request	**UploadFileRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-54**.

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Table 8-54 UploadFileRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-)

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Parameter	Type	Mandatory (Yes/No)	Description
			adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
objectMetadata	**ObjectMetadata**	No	**Explanation:** Object metadata. For details, see **Table 8-61**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
acl	AccessControlList	No	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 8-55 for the available options. • To use a user-defined ACL, see Table 8-62 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE
enableCheckpoint	boolean	No	**Explanation:** Whether to enable the resumable mode. **Value range**: **true**: The resumable mode is enabled. **false**: The resumable mode is disabled. **Default value**: **false**

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Parameter	Type	Mandatory (Yes/No)	Description
checkpointFile	String	No	**Explanation:** Path of a file generated for recording the progress of a resumable upload. The file contains the information about parts and the upload progress. **Restrictions:** This parameter is valid only for resumable uploads. **Default value**: If this parameter is left blank, the progress file will be in the same directory as the local file to be uploaded.
uploadFile	String	Yes	**Explanation:** Full path of the file or folder to be uploaded, for example, **aa/bb.txt** or **aa/**. **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
extensionPermis-sionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObject-PermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-59**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener, used for obtaining the upload progress. For details, see **Table 8-56**.

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Parameter	Type	Mandatory (Yes/No)	Description
partSize	long	No	**Explanation:** Part size. **Value range**: The value ranges from 100 KB to 5 GB, in bytes. **Default value**: 9 MB
taskNum	int	No	**Explanation:** Maximum number of files that can be uploaded concurrently in a multipart upload. **Value range**: An integer from **1** to **10000** **Default value**: **1**, indicating concurrent uploads are not used.
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

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Parameter	Type	Mandatory (Yes/No)	Description
needCalculateCRC64	boolean	No	**Explanation:** Whether to automatically calculate the CRC64 value of the data to be uploaded and submit the CRC64 value to the server for verification. **Restrictions:** This parameter is not supported for POSIX or SFS objects. **Value range:** **true**: The SDK calculates CRC64 and submits it to the server for verification. **false**: CRC64 is not calculated. **Default value:** **false**

Table 8-55 Pre-defined 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.

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Constant	Description
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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

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Table 8-56 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-57**. **Default value**: None

Table 8-57 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-58**. **Default value**: None

Table 8-58 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Table 8-59 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.

Constant	Default Value
AES256	AES256

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Table 8-60 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-61 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** MIME type of the object. MIME type is a standard way of describing a data type and is used by the browser to decide how to display data. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-60**. **Default value**: None

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

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

Table 8-62 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-63**.

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

Table 8-63 Owner

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

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Table 8-64 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-66**. Grantee (user group) information. For details, see **Table 8-67**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-65**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-65 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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Table 8-66 CanonicalGrantee

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

Table 8-67 GroupGrantee

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

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Responses

Table 8-68 CompleteMultipartUploadResult

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

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

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Parameter	Type	Description
etag	String	**Explanation:** 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 **A** when an object is uploaded and is **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. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version number will be returned. **Value range**: The value must contain 32 characters. **Default value**: None

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.
```

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```
        // 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.1.7 Uploading an Object - Resumable, Asynchronous (SDK for Java)

Function

Asynchronous resumable upload is a resumable upload that supports asynchronous operations and can be paused, canceled, and resumed. It works by creating a sub-thread to perform resumable uploads. If the upload fails, the exception can be checked in a callback. If the upload is successful, an encapsulated Optional object can be obtained from the task.

Restrictions

- To upload an object, you must be the bucket owner or have the object upload permission. To use this API, permissions are required. You can use IAM policies to grant the **obs:object:PutObject** permission or bucket policies to grant the **PutObject** permission.

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- The file uploaded by the resumable upload API must exceed 100 KB.
- You must enable the resumable upload option when you use this API, so the progress of the last upload can be obtained for upload resumption.

Method

obsClientAsync.uploadFileAsync(**UploadFileRequest request**, TaskCallback<**CompleteMultipartUploadResult**, **UploadFileRequest**> completeCallback)

Request Parameters

Table 8-69 uploadFile

Parameter	Type	Mandatory (Yes/No)	Description
request	**UploadFileRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-70**.
completeCallback	**TaskCallback** <**CompleteMultipartUploadResult**, **UploadFileRequest**>	Yes	**Explanation:** Callbacks executed to obtain results (success or exception) for an asynchronous upload.

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Table 8-70 UploadFileRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-)

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Parameter	Type	Mandatory (Yes/No)	Description
			adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
objectMetadata	**ObjectMetadata**	No	**Explanation:** Object metadata. For details, see **Table 8-61**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
acl	AccessControlList	No	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 8-55 for the available options. • To use a user-defined ACL, see Table 8-62 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE
enableCheckpoint	boolean	No	**Explanation:** Whether to enable the resumable mode. **Value range**: **true**: The resumable mode is enabled. **false**: The resumable mode is disabled. **Default value**: **false**

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Parameter	Type	Mandatory (Yes/No)	Description
checkpointFile	String	No	**Explanation:** Path of a file generated for recording the progress of a resumable upload. The file contains the information about parts and the upload progress. **Restrictions:** This parameter is valid only for resumable uploads. **Default value**: If this parameter is left blank, the progress file will be in the same directory as the local file to be uploaded.
uploadFile	String	Yes	**Explanation:** Full path of the file or folder to be uploaded, for example, **aa/bb.txt** or **aa/**. **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
extensionPermis-sionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObject-PermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-59**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener, used for obtaining the upload progress. For details, see **Table 8-56**.

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Parameter	Type	Mandatory (Yes/No)	Description
partSize	long	No	**Explanation:** Part size. **Value range**: The value ranges from 100 KB to 5 GB, in bytes. **Default value**: 9 MB
taskNum	int	No	**Explanation:** Maximum number of files that can be uploaded concurrently in a multipart upload. **Value range**: An integer from **1** to **10000** **Default value**: **1**, indicating concurrent uploads are not used.
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

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Parameter	Type	Mandatory (Yes/No)	Description
needCalculateCRC64	boolean	No	**Explanation:** Whether to automatically calculate the CRC64 value of the data to be uploaded and submit the CRC64 value to the server for verification. **Restrictions:** This parameter is not supported for POSIX or SFS objects. **Value range:** **true**: The SDK calculates CRC64 and submits it to the server for verification. **false**: CRC64 is not calculated. **Default value:** **false**

Table 8-71 TaskCallback<result, request> generic interface

Method	Return Value	Type	Description
onSuccess	void	result (generic)	Called if the request is completed successfully.
onException	void	**ObsException**, request (generic)	Called if the request failed. The exception and corresponding request information are returned.

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Responses

Table 8-72 UploadFileTask

Method	Return Value	Type	Description
isTaskFinished	boolean	None	Whether the task is finished.
waitUntilFinished	void	None	Blocks the current thread and waits until the asynchronous upload completes.
cancel	boolean	None	Cancels an asynchronous upload. If the upload was successfully canceled, **true** is returned; otherwise, **false** is returned.
getResult	java.util.Optional <**CompleteMultipartUploadResult**>	None	Blocks the current thread and waits until the asynchronous upload completes before returning the result. If the upload failed, the value of **Optional.isPresent()** is **false**.

Table 8-73 CompleteMultipartUploadResult

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

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

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Parameter	Type	Description
etag	String	**Explanation:** 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 **A** when an object is uploaded and is **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. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version number will be returned. **Value range**: The value must contain 32 characters. **Default value**: None

Code Examples

This example uses the asynchronous resumable method to upload **localfile** to bucket **examplebucket** as object **objectKey** and to pause and resume the upload.

```
import com.obs.services.ObsClientAsync;
import com.obs.services.exception.ObsException;
import com.obs.services.internal.task.UploadFileTask;
import com.obs.services.internal.utils.CallCancelHandler;
import com.obs.services.model.CompleteMultipartUploadResult;
import com.obs.services.model.TaskCallback;
import com.obs.services.model.UploadFileRequest;

import java.io.IOException;
import java.util.Map;
import java.util.Optional;

public class TestUploadFileCancel
{
```

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```
  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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        try (ObsClientAsync obsClientAsync = new ObsClientAsync(ak, sk, securityToken, endPoint)) {
            String bucketName = "examplebucket";
            String objectKey = "objectKey";
            String localFile = "localfile";
            UploadFileRequest uploadFileRequest1 = new UploadFileRequest(bucketName, objectKey, localFile);
            uploadFileRequest1.setProgressListener(status -> {
                // Obtain the average upload speed.
                System.out.println("AverageSpeed:" + status.getAverageSpeed());
                // Obtain the upload progress (%).
                System.out.println("TransferPercentage:" + status.getTransferPercentage());
            });
            CallCancelHandler callCancelHandler = new CallCancelHandler();
            uploadFileRequest1.setCancelHandler(callCancelHandler);
            // Refresh the upload progress each time 5 MB of data is uploaded.
            uploadFileRequest1.setProgressInterval(5 * 1024 * 1024L);
            // Enable the recording of progress, which is used for resuming upload.
            uploadFileRequest1.setEnableCheckpoint(true);
            // Set the number of concurrent upload threads to 5.
            uploadFileRequest1.setTaskNum(5);
            // Set the part size to 5 MB.
            uploadFileRequest1.setPartSize(5 * 1024 * 1024L);
            //Pause the task without aborting it. The parts that have been uploaded are not deleted.
            uploadFileRequest1.setNeedAbortUploadFileAfterCancel(false);
            // Invoke a callback to show the upload result.
            TaskCallback<CompleteMultipartUploadResult,UploadFileRequest> completeCallback = new TaskCallback<CompleteMultipartUploadResult, UploadFileRequest>()
            {
                @Override
                public void onSuccess(CompleteMultipartUploadResult result)
                {}
                @Override
                public void onException(ObsException e, UploadFileRequest singleRequest)
                {
                    System.out.println("uploadFileAsync failed");
                    if(singleRequest.getCancelHandler()!=null) {
                        System.out.println("UploadFileRequest isCanceled ? " + singleRequest.getCancelHandler().isCancelled());
                    }
                    // 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());
                    // Check all Map entries and print all headers associated with the error.
                    Map<String, String> headers = e.getResponseHeaders();
                    if(headers != null){
                        for (Map.Entry<String, String> header : headers.entrySet()) {
                            if(header.getKey().contains("error")){
```

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```
                        System.out.println("errorHeaderKey:"+header.getKey()+",
errorHeaderValue:"+header.getValue());
                    }
                }
            }
            e.printStackTrace();
        }
    };
    // Start the asynchronous resumable upload.
    UploadFileTask uploadFileTask = obsClientAsync.uploadFileAsync(uploadFileRequest1,
completeCallback);
    Thread.sleep(1000);
    // Pause the asynchronous upload after it is ongoing for a while. The parts that have been
uploaded are not affected.
    uploadFileTask.cancel();
    // Wait for the upload to finish.
    uploadFileTask.waitUntilFinished();
    // Resume the upload from the previously recorded checkpoint.
    uploadFileTask = obsClientAsync.uploadFileAsync(uploadFileRequest1, completeCallback);
    Optional<CompleteMultipartUploadResult> result = uploadFileTask.getResult();
    if (result.isPresent()) {
        System.out.println("uploadFileAsync Successfully!");
        System.out.println("HTTP StatusCode:"+result.get().getStatusCode());
        System.out.println("ObjectUrl:"+result.get().getObjectUrl());
        System.out.println("Etag:"+result.get().getEtag());
    }
  }
  catch (IOException | InterruptedException e)
  {
    e.printStackTrace();
  }
 }
}
```

This example uses the asynchronous resumable method to upload **localfile** to bucket **examplebucket** as object **objectKey** and to pause and abort the upload.

```
import com.obs.services.ObsClientAsync;
import com.obs.services.exception.ObsException;
import com.obs.services.internal.task.UploadFileTask;
import com.obs.services.internal.utils.CallCancelHandler;
import com.obs.services.model.CompleteMultipartUploadResult;
import com.obs.services.model.TaskCallback;
import com.obs.services.model.UploadFileRequest;

import java.io.IOException;
import java.util.Map;

public class TestUploadFileCancelAndAbort
{
   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 region where the bucket is located.
      String endPoint = "https://your-endpoint";
      // Obtain an endpoint using environment variables or import it in other ways.
      //String endPoint = System.getenv("ENDPOINT");

      // Create an ObsClient instance.
      try (ObsClientAsync obsClientAsync = new ObsClientAsync(ak, sk, securityToken, endPoint)) {
         String bucketName = "examplebucket";
```

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```
        String objectKey = "objectKey";
        String localFile = "localfile";
        UploadFileRequest uploadFileRequest1 = new UploadFileRequest(bucketName, objectKey, localFile);
        uploadFileRequest1.setProgressListener(status -> {
            // Obtain the average upload speed.
            System.out.println("AverageSpeed:" + status.getAverageSpeed());
            // Obtain the upload progress (%).
            System.out.println("TransferPercentage:" + status.getTransferPercentage());
        });
        CallCancelHandler callCancelHandler = new CallCancelHandler();
        uploadFileRequest1.setCancelHandler(callCancelHandler);
        // Refresh the upload progress each time 5 MB of data is uploaded.
        uploadFileRequest1.setProgressInterval(5 * 1024 * 1024L);
        // Set the number of concurrent upload threads to 5.
        uploadFileRequest1.setTaskNum(5);
        // Set the part size to 5 MB.
        uploadFileRequest1.setPartSize(5 * 1024 * 1024L);
        //Pause and abort the task. The parts that have been uploaded are deleted.
        uploadFileRequest1.setNeedAbortUploadFileAfterCancel(true);
        // Invoke a callback to show the upload result.
        TaskCallback<CompleteMultipartUploadResult,UploadFileRequest> completeCallback =
                new TaskCallback<CompleteMultipartUploadResult, UploadFileRequest>()
        {
            @Override
            public void onSuccess(CompleteMultipartUploadResult result)
            {}
            @Override
            public void onException(ObsException e, UploadFileRequest singleRequest)
            {
                System.out.println("uploadFileAsync failed");
                if(singleRequest.getCancelHandler()!=null) {
                    System.out.println("UploadFileRequest isCanceled ? " +
singleRequest.getCancelHandler().isCancelled());
                }
                // 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());
                // Check all Map entries and print all headers associated with the error.
                Map<String, String> headers = e.getResponseHeaders();
                if(headers != null){
                    for (Map.Entry<String, String> header : headers.entrySet()) {
                        if(header.getKey().contains("error")){
                            System.out.println("errorHeaderKey:"+header.getKey()+",
errorHeaderValue:"+header.getValue());
                        }
                    }
                }
                e.printStackTrace();
            }
        };
        // Start the asynchronous resumable upload.
        UploadFileTask uploadFileTask = obsClientAsync.uploadFileAsync(uploadFileRequest1,
completeCallback);
        Thread.sleep(1000);
        // Pause and abort the ongoing upload. The parts that have been uploaded are deleted. If the
upload is complete, it cannot be aborted.
        uploadFileTask.cancel();
        // Wait for the upload to finish.
        uploadFileTask.waitUntilFinished();
    }
    catch (IOException | InterruptedException e)
    {
        e.printStackTrace();
```

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```
    }
  }
}
```

8.1.1.8 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. You can use code to simulate a browser-based upload. You can also perform a browser-based upload with the following steps:

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).
- 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.
- You can submit a service ticket to obtain the HTML form example and download it.

Method

obsClient.createPostSignature(**PostSignatureRequest request**)

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Table 8-74 createPostSignature

Parameter	Type	Mandatory (Yes/No)	Description
request	PostSignatureRequest	Yes	**Explanation:** Request parameters for a browser-based upload. For details, see Table 8-75.

Table 8-75 PostSignatureRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	No	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
requestDate	Date	No	**Explanation:** Time the request is initiated. **Default value**: None
expiryDate	Date	No	**Explanation:** Date of expiry. **Default value**: None
expires	long	No	**Explanation:** Validity period of authentication for a browser-based upload **Value range**: An integer greater than 0, in seconds. **Default value**: 300
conditions	List<String>	No	**Explanation:** The conditions specified for the form. The SDK uses the specified value to calculate the policy and ignores the **formParams**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
formParams	Map<String, Object>	No	**Explanation:** Form parameters in the request. *String* indicates the name of the form parameter, and *Object* indicates the value of the form parameter. **Default value**: None

Responses

Table 8-76 PostSignatureResponse

Parameter	Type	Description
OriginPolicy	String	**Explanation:** Value of **Policy** that is not encoded by Base64. This parameter can only be used for verification. For example: **{"expiration":"2023-09-12T12:52:59Z","conditions":[{"content-type":"text/plain"},{"bucket":"examplebucket"},{"key":"example/objectname"},]}"** **Default value**: None

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Parameter	Type	Description
Policy	String	**Explanation:** Base64-encoded value of the policy. For example: **eyJleHBpcmF0aW9uIjoiMjAyMy0wOS0xMlQxMjo1Mjo1OVoiLCJjb25kaXRpb25zIjpbeyJjb250ZW50LXR5cGUiOiJ0ZXh0L3BsYWluIn0seyJidWNrZXQiOiJleGFtcGxlYnV-ja2V0In0seyJrZXkiOiJleGFtcGxlL29iamVjdG5hbWUifSxdfQ==** **Default value**: None
Signature	String	**Explanation:** **signature** in the form. For example: **g0jQr4v9VWd1Q2FOFDG6LGfV9Cw=** **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        // Use a 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
***"/>-->
```

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```
    <input name="file" type="file" />
    <input name="submit" value="Upload" type="submit" />
</form>
</body>
</html>
```

8.1.1.9 Multipart Upload (SDK for Java)

8.1.1.9.1 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

8.1.1.9.2 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**.

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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).
- 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 8-77 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	InitiateMultipartUploadRequest	Yes	**Explanation:** Request parameters for initiating a multipart upload. For details, see **Table 8-78**.

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Table 8-78 InitiateMultipartUploadRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	**ObjectMetadata**	No	**Explanation:** Object metadata. For details, see **Table 8-82**. **Default value**: None
acl	**AccessControlList**	No	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see **Table 8-79** for the available options. • To use a user-defined ACL, see **Table 8-83** to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObject-PermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-80**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call after the object has been uploaded. **Value range**: An integer greater than 0, in days. **Default value**: None
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-79 Pre-defined ACL

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

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Constant	Description
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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

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Constant	Description
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 8-80 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.

Constant	Default Value
AES256	AES256

Constant	Default Value
OBS_KMS	kms

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Constant	Default Value
KMS	kms
AES256	AES256

Table 8-81 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Table 8-82 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the file.

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Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-81**. **Default value**: None

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

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

Table 8-83 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-84**.

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Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-85**.

Table 8-84 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-85 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-87**. Grantee (user group) information. For details, see **Table 8-88**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-86**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 8-86 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 8-87 CanonicalGrantee

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

Table 8-88 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Responses

Table 8-89 InitiateMultipartUploadResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
uploadId	String	**Explanation:** The ID created by the OBS server to identify the multipart upload globally. **Value range**: The value must contain 1 to 32 characters. **Default value**: None

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

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Parameter	Type	Description
objectKey	String	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.1.1.9.3 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).
- 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 use a locking mechanism to prevent concurrent uploads of the same part of an object. Concurrent uploads for different parts of the same object do not need to be locked.

Method

obsClient.uploadPart(**UploadPartRequest request**)

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Request Parameters

Table 8-90 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	UploadPartRequest	Yes	**Explanation:** Request parameters for uploading a part. For details, see Table 8-91.

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Table 8-91 UploadPartRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
partNumber	int	Yes	**Explanation:** Part number. **Value range**: The value ranges from 1 to 10,000. If a part number is not within the range, OBS returns error code **400 Bad Request**. **Default value**: None
uploadId	String	Yes	**Explanation:** Multipart upload ID, which can be returned by **initiating a multipart upload**, for example, **000001648453845DBB78F2340DD460D8**. **Restrictions:** The value must contain 32 characters. **Default value**: None
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Restrictions:** You must specify either **file** or **input**. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Restrictions:** You must specify either **file** or **input**. If one of the two parameters is left blank, the other must be specified. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
offset	long	No	**Explanation:** Start offset of a part in the source file. This parameter is not supported for streams. **Value range**: A non-negative integer not exceeding the size of the object to be uploaded, in bytes. **Default value**: 0
partSize	Long	No	**Explanation:** Part size. **Restrictions:** ● 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. ● 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. **Value range**: The value ranges from 100 KB to 5 GB, in bytes. **Default value**: 102400

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Parameter	Type	Mandatory (Yes/No)	Description
attachMd5	boolean	No	**Explanation:** Whether to automatically calculate the MD5 value of the data to be uploaded. To ensure data integrity, set **UploadPartRequest.setAttachMd5** to **true** 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 **Content-MD5** 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. **Restrictions:** If **attachMd5** and **contentMd5** are used at the same time, **attachMd5** is ignored. **Value range**: **true**: The MD5 value of the data to be uploaded is automatically calculated. **false**: The MD5 value of the data to be uploaded is not automatically calculated. **Default value**: **false**

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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. **Restrictions:** If **attachMd5** and **contentMd5** are used at the same time, **attachMd5** is ignored. **Value range**: The value must contain 32 characters. **Default value**: None
needCalculateCRC64	boolean	No	**Explanation:** Whether to automatically calculate the CRC64 value of the data to be uploaded. **Restrictions:** This parameter is not supported for POSIX or SFS objects. This parameter is supported only for file uploads. **Value range:** **true**: The SDK calculates CRC64 and submits it to the server for verification. **false**: CRC64 is not calculated. **Default value:** false
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 8-93**.

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Parameter	Type	Mandatory (Yes/No)	Description
progressInterval	long	No	**Explanation**: Interval for reporting the upload progress, in bytes. For example, **1024 * 1024L** indicates that the upload progress is reported each time 1 MB data is uploaded. **Default value**: 100 * 1024L
autoClose	boolean	No	**Explanation:** Whether to automatically close data streams after the upload is complete. **Value range**: **true**: The data stream is automatically closed. **false**: The data stream is not automatically closed. **Default value**: true

Constant	Default Value
AES256	AES256

Constant	Default Value
KMS	kms
AES256	AES256

Table 8-92 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-93 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-94**. **Default value**: None

Table 8-94 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-95**. **Default value**: None

Table 8-95 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted, in bytes.

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Method	Return Value Type	Description
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Responses

Table 8-96 UploadPartResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
partNumber	int	**Explanation:** Part number. **Value range**: [1,10000] **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** Base64-encoded, 128-bit MD5 value of a part. ETag is the unique identifier of the part content and is used to determine whether the content of a part are changed. For example, if the ETag value is **A** when a part is uploaded and is **B** when the part is downloaded, this indicates the content of the part are changed. The ETag reflects changes only to the content of a part, not its metadata. Parts created by the upload and copy operations have unique ETags. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
clientCalculatedCRC64	String	**Explanation:** The 64-bit CRC value calculated for the part by the client based on the ECMA-182 standard. The CRC64 value is the unique identifier of the object content. It can be used to determine whether the object content is changed. If an object has different CRC64 values when being uploaded and downloaded, its content has been changed. CRC64 reflects changes to the content of the object, not its metadata. **Restrictions:** ● This parameter is returned when the CRC64 value was verified for the uploaded part, or when the CRC64 feature has been enabled for the bucket. ● This parameter is not supported for POSIX or SFS objects. **Value range:** A 64-bit CRC value calculated based on the ECMA-182 standard **Default value:** None

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Code Example: Uploading a Local File

This example calls **obsClient.uploadPart** to upload parts of a local file 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 10,000.
            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 of the second part. This parameter takes effect only when a file is uploaded. This parameter is not supported for streams.
            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");
```

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```
            // 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: Uploading a Stream

This example calls **obsClient.uploadPart** to upload parts in streaming mode 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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>();
            UploadPartRequest request = new UploadPartRequest("examplebucket", "objectname");
            // Set the upload ID.
            request.setUploadId(uploadId);
            // Set the part number, which ranges from 1 to 10,000.
            request.setPartNumber(1);
            // Set the stream to be uploaded.
            String content="Hello OBS";
            request.setInput(new ByteArrayInputStream(content.getBytes()));
            // Upload a part.
            UploadPartResult result = obsClient.uploadPart(request);
            partEtags.add(new PartEtag(result.getEtag(), result.getPartNumber()));
            System.out.println("uploadPart successfully");
```

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```
        } 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();
        }
    }
}
```

8.1.1.9.4 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.

As long as the multipart upload is not aborted, all uploaded parts occupy the space. However, after you assembled the specified parts, the uploaded but unassembled parts will be deleted to free up space.

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).
- 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**)

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Request Parameters

Table 8-97 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	CompleteMultipartUploadRequest	Yes	**Explanation:** Request parameters for assembling parts. For details, see Table 8-98.

Table 8-98 CompleteMultipartUploadRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
partEtag	List<**PartEtag**>	Yes	**Explanation:** List of parts to be assembled. For details, see **Table 8-99**.
uploadId	String	Yes	**Explanation:** Multipart upload ID, for example, **000001648453845DBB78F2340DD460D8**. **Value range**: The value must contain 32 characters. **Default value**: None
encodingType	String	No	**Explanation:** Encoding type for **objectKey** in the response. If **objectKey** in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode **objectKey**. **Value range**: **url** **Default value**: None. If you leave this parameter blank, encoding is not applied.
userHeaders	HashMap<String, String>	No	**Explanation:** User header list. In **HashMap**, the **String** key and value indicate the name and value of the user header field respectively. The SDK does not process the **userHeaders** and instead transparently transmits it to the server for later use. **Default value**: None

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Table 8-99 PartEtag

Parameter	Type	Mandatory (Yes/No)	Description
etag	String	Yes	**Explanation:** Part ETag. Base64-encoded, 128-bit MD5 value of the part. **Value range**: The value must contain 32 characters. **Default value**: None
partNumber	Integer	Yes	**Explanation:** Part number. Part numbers can be inconsecutive. **Value range**: An integer ranging from 1 to 10000. **Default value**: None

Responses

Table 8-100 CompleteMultipartUploadResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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Parameter	Type	Description
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
etag	String	**Explanation:** 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 **A** when an object is uploaded and is **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. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
bucketName	String	**Explanation:** Bucket in which parts are assembled. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** The name of the object the parts are assembled into. 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
location	String	**Explanation:** URL of the object the parts are assembled into. **Default value**: None
versionId	String	**Explanation:** Version ID of the object the parts are assembled into. If versioning is enabled for the bucket, the object version number will be returned. **Value range**: The value must contain 32 characters. **Default value**: None
objectUrl	String	**Explanation:** Full path to the object the parts are assembled into. **Default value**: None
encodingType	String	**Explanation:** Encoding type for **objectKey** in the response. If **objectKey** in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode **objectKey**. **Value range**: **url** **Default value**: None. If you leave this parameter blank, encoding is not applied.

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.1.9.5 Code Example of a Multipart Upload (SDK for Java)

Multipart upload is mainly used for large file upload or when the network connection is poor.

You can use **UploadPartRequest.setOffset** and **UploadPartRequest.setPartSize** to set the start and end positions for uploading a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.1.9.6 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.

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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).

Method

obsClient.abortMultipartUpload(**AbortMultipartUploadRequest request**)

Request Parameters

Table 8-101 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**AbortMultipartUploadRequest**	Yes	**Explanation:** Request parameters for aborting a multipart upload. For details, see **Table 8-102**.

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Table 8-102 AbortMultipartUploadRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	Bucket name. **Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
uploadId	String	Yes	**Explanation:** Multipart upload ID, for example, **000001648453845DBB78F2340DD460D8**. **Value range**: The value must contain 32 characters. **Default value**: None

Responses

Table 8-103 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 {
```

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```
   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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.1.9.7 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.

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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).

Method

obsClient.listParts(**ListPartsRequest request**)

Request Parameters

Table 8-104 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ListPartsRequest**	Yes	**Explanation:** Request parameters for listing uploaded parts. For details, see **Table 8-105**.

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Table 8-105 ListPartsRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
uploadId	String	Yes	**Explanation:** Multipart upload ID, for example, **000001648453845DBB78F2340DD460D8**. **Value range**: The value must contain 1 to 32 characters. **Default value**: None
maxParts	Integer	No	**Explanation:** Maximum number of parts that can be listed per page. **Restrictions:** If the specified value is greater than **1000**, only 1,000 parts are returned. **Value range**: The value ranges from **1** to **1000**. **Default value**: **1000**

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Parameter	Type	Mandatory (Yes/No)	Description
partNumberMarker	Integer	No	**Explanation:** Part number the listing starts from. **Restrictions:** OBS lists only parts with numbers greater than the one specified by this parameter. **Default value**: None
encodingType	String	No	**Explanation:** Encoding type for **key** in the response. If **key** in the response contains control characters that are not supported by the XML 1.0 standard, you can specify this parameter to encode **key**. **Value range**: **url** **Default value**: None. If you leave this parameter blank, encoding is not applied.

Responses

Table 8-106 ListPartsResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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Parameter	Type	Description
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
bucket	String	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None

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Parameter	Type	Description
key	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
uploadId	String	**Explanation:** Multipart upload ID, for example, **000001648453845DBB78F2340DD460D8**. **Value range**: The value must contain 32 characters. **Default value**: None
initiator	**Owner**	**Explanation:** Initiator of the multipart upload. For details, see **Table 8-109**. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the multipart upload, which is consistent with **initiator**. For details, see **Table 8-109**. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** Storage class of the object to be uploaded. **Value range**: See **Table 8-108**. **Default value**: None

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Parameter	Type	Description
multipartList	List<**Multipart**>	**Explanation:** List of uploaded parts. For details, see **Table 8-107**. **Default value**: None
maxParts	Integer	**Explanation:** Maximum number of parts that can be listed per page, which is consistent with that set in the request. **Restrictions:** If the specified value is greater than 1,000, only 1,000 parts are returned. **Value range**: The value ranges from 1 to 1,000. **Default value**: 1000
isTruncated	boolean	**Explanation:** Whether all parts are returned in the response. **Value range**: • **true**: Not all parts are returned. • **false**: All parts are returned. **Default value**: None
partNumberMarker	String	**Explanation:** Part number after which part listing begins, which is consistent with that set in the request. **Default value**: None
nextPartNumberMarker	String	**Explanation:** 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 **partNumberMarker** in the subsequent request. **Default value**: None

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Table 8-107 Multipart

Parameter	Type	Description
partNumber	Integer	**Explanation:** Part number. **Value range**: An integer ranging from 1 to 10000. **Default value**: None
lastModified	Date	**Explanation:** Last time the part was uploaded. **Default value**: None
etag	String	**Explanation:** Part ETag. Base64-encoded, 128-bit MD5 value of the part. **Value range**: The value must contain 32 characters. **Default value**: None
size	Long	**Explanation:** Part size. **Default value**: None

Table 8-108 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-109 Owner

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

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        // 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        // 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();
        }
    }
}
```

8.1.1.9.8 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).
- By default, only the bucket owner and multipart upload initiator have this permission. The bucket owner can grant others the **ListBucketMultipartUploads** permission.

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Method

obsClient.listMultipartUploads(**ListMultipartUploadsRequest request**)

Request Parameters

Table 8-110 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ListMultipartUploadsRequest**	Yes	**Explanation:** Request parameters for listing multipart uploads. For details, see **Table 8-111**.

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Table 8-111 ListMultipartUploadsRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	No	**Explanation:** Prefix that the object names in the multipart uploads to be listed must contain. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, the multipart uploads of **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If you leave this parameter blank, all multipart uploads in the bucket will be returned. **Restrictions:** The value must contain 1 to 1,024 characters. **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	**Explanation:** Object names are grouped by this parameter, which is often used with **prefix**. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **commonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **commonPrefixes**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, objects **abcd** and **abcde** are grouped into a **commonPrefixes** with **abcd** as the prefix. If only **delimiter** is set to **d**, objects **abcd** and **abcde** are grouped into a **commonPrefixes** with **abcd** as the prefix, and **bbcde** is grouped separately into another **commonPrefixes** with **bbcd** as the prefix. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
maxUploads	Integer	No	**Explanation:** Maximum number of multipart uploads to list. **Restrictions:** If the specified value is greater than **1000**, only 1,000 multipart uploads are returned. **Value range**: An integer from **1** to **1000** **Default value**: **1000**

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Parameter	Type	Mandatory (Yes/No)	Description
keyMarker	String	No	**Explanation:** Object name after which the multipart upload listing begins. **Value range**: The value of **nextKeyMarker** in the response body of the last request. **Default value**: None
uploadIdMarker	String	No	**Explanation:** Upload ID after which the multipart upload listing begins. **Restrictions:** This parameter must be used together with **keyMarker**, indicating multipart uploads with IDs greater than the specified **uploadIdMarker** for the specified **keyMarker** are listed. **Value range**: The value of **nextUploadIdMarker** in the response body of the last request. **Default value**: None
encodingType	String	No	**Explanation:** Encoding type for some elements in the response. If **delimiter**, **keyMarker**, **prefix**, **nextKeyMarker**, and **objectKey** contain control characters that are not supported by the XML 1.0 standard, you can set **encodingType** to encode **delimiter**, **keyMarker**, **prefix** (including the **prefix** in **commonPrefixes**), **nextKeyMarker**, and **objectKey** in the response. **Value range**: **url** **Default value**: None. If you leave this parameter blank, encoding is not applied.

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Responses

Table 8-112 MultipartUploadListing

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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Parameter	Type	Description
bucket	String	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
keyMarker	String	**Explanation:** Object name after which the multipart upload listing begins, which is consistent with that set in the request. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

Parameter	Type	Description
uploadIdMarker	String	**Explanation:** Upload ID after which the multipart upload listing begins, which is consistent with that set in the request. **Value range**: The value must contain 1 to 32 characters. **Default value**: None
nextKeyMarker	String	**Explanation:** 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 **keyMarker** in the subsequent request. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
nextUploadIdMarker	String	**Explanation:** Upload ID to start with for the next multipart upload listing request. It is used with the **nextKeyMarker** parameter. If only part of multipart uploads are returned for the current request, this parameter is included in the response for setting **uploadIdMarker** in the subsequent request. **Value range**: The value must contain 1 to 32 characters. **Default value**: None

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Parameter	Type	Description
prefix	String	**Explanation:** Object name prefix in multipart uploads, which is consistent with that set in the request. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, the multipart uploads of **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If you leave this parameter blank, all multipart uploads in the bucket will be returned. **Restrictions:** The value must contain 1 to 1,024 characters. **Default value**: None
maxUploads	int	**Explanation:** Maximum number of listed multipart uploads, which is consistent with that set in the request. **Restrictions:** If the specified value is greater than **1000**, only 1,000 multipart uploads are returned. **Value range**: An integer from **1** to **1000** **Default value**: **1000**
truncated	boolean	**Explanation:** Whether all multipart uploads are returned in the response. **Value range**: • **true**: Not all multipart uploads are returned. • **false**: All multipart uploads are returned. **Default value**: None
multipartTaskList	List<**Multipart Upload**>	**Explanation:** List of multipart uploads. For details, see **Table 8-113**.

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Parameter	Type	Description
delimiter	String	**Explanation:** 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 **prefix**. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **commonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **commonPrefixes**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, objects **abcd** and **abcde** are grouped into a **commonPrefixes** with **abcd** as the prefix. If only **delimiter** is set to **d**, objects **abcd** and **abcde** are grouped into a **commonPrefixes** with **abcd** as the prefix, and **bbcde** is grouped separately into another **commonPrefixes** with **bbcd** as the prefix. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
commonPrefixes	String[]	**Explanation:** List of object name prefixes grouped according to the **delimiter** parameter (if specified). **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Table 8-113 MultipartUpload

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

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Parameter	Type	Description
uploadId	String	**Explanation:** Multipart upload ID, for example, **000001648453845DBB78F2340DD460D8**. **Value range**: The value must contain 1 to 32 characters. **Default value**: None
initiatedDate	java.util.Date	**Explanation:** Time when the multipart upload is initiated. **Restrictions:** The time must be in the ISO8601 format. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** Storage class of the object to be uploaded. **Value range**: See **Table 8-114**. **Default value**: None
initiator	**Owner**	**Explanation:** Initiator of the multipart upload. For details, see **Table 8-115**.
owner	**Owner**	**Explanation:** Owner of the multipart upload, which is consistent with **initiator**. For details, see **Table 8-115**.

Table 8-114 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-115 Owner

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

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.2 Object Download (SDK for Java)

8.1.2.1 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 **true**.
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.

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Parameter	Type	Mandatory (Yes/No)	Description
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.
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.
versionId	String	No	Version number.

8.1.2.2 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).
- Objects in the 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**)

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Request Parameters

Table 8-116 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	GetObjectRequest	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-117**.

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Table 8-117 GetObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
rangeStart	Long	No	**Explanation:** Start position for object download. **Value range**: A non-negative integer. **Default value**: None
rangeEnd	Long	No	**Explanation:** End position for object download. **Restrictions:** The upper limit of the value is the object length minus 1, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
ifNoneMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
IfModifiedSince	Date	No	**Explanation:** The object is returned if it has been modified since the specified time; otherwise, an error is returned. **Default value**: None
IfUnmodifiedSince	Date	No	**Explanation:** The object is returned if it has not been modified since the specified time; otherwise, an error is returned. **Default value**: None
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** Additional information about the object. For details, see **Table 8-118**.
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener for obtaining the download progress. For details, see **Table 8-119**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-118 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

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Table 8-119 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-120**. **Default value**: None

Table 8-120 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-121**. **Default value**: None

Table 8-121 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

Table 8-122 Owner

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

Table 8-123 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-124 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** ● The MD5 value of the object must be Base64 encoded. ● If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
crc64	String	No	**Explanation:** The 64-bit CRC value calculated for the object based on the ECMA-182 standard. The CRC64 value is the unique identifier of the object content. It can be used to determine whether the object content is changed. If an object has different CRC64 values when being uploaded and downloaded, its content has been changed. CRC64 reflects changes to the content of the object, not its metadata. **Restrictions:** • This parameter is returned when the CRC64 value was verified for the uploaded object, or when the CRC64 feature has been enabled for the bucket. • This parameter is not supported for POSIX or SFS objects. **Value range:** A 64-bit CRC value calculated based on the ECMA-182 standard **Default value:** None
storageClass	StorageClassEnum	No	**Explanation:** 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. **Value range**: See **Table 8-123**. **Default value**: None

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

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

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Responses

Table 8-125 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-122**.

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Parameter	Type	Description
metadata	ObjectMetadata	**Explanation:** Object metadata. For details, see **Table 8-124**.
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: 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");
        // Enter the endpoint corresponding to the region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.1.2.3 Downloading an Object - Range-Based (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 1 to byte 1,001 (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).
- Objects in the 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 8-126 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**GetObjectRequest**	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-127**.

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Table 8-127 GetObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
rangeStart	Long	No	**Explanation:** Start position for object download. **Value range**: A non-negative integer. **Default value**: None
rangeEnd	Long	No	**Explanation:** End position for object download. **Restrictions:** The upper limit of the value is the object length minus 1, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
ifNoneMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
IfModifiedSince	Date	No	**Explanation:** The object is returned if it has been modified since the specified time; otherwise, an error is returned. **Default value**: None
IfUnmodifiedSince	Date	No	**Explanation:** The object is returned if it has not been modified since the specified time; otherwise, an error is returned. **Default value**: None
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** Additional information about the object. For details, see **Table 8-128**.
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener for obtaining the download progress. For details, see **Table 8-129**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-128 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

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Table 8-129 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-130**. **Default value**: None

Table 8-130 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-131**. **Default value**: None

Table 8-131 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

Table 8-132 Owner

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

Table 8-133 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-134 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** ● The MD5 value of the object must be Base64 encoded. ● If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
crc64	String	No	**Explanation:** The 64-bit CRC value calculated for the object based on the ECMA-182 standard. The CRC64 value is the unique identifier of the object content. It can be used to determine whether the object content is changed. If an object has different CRC64 values when being uploaded and downloaded, its content has been changed. CRC64 reflects changes to the content of the object, not its metadata. **Restrictions:** • This parameter is returned when the CRC64 value was verified for the uploaded object, or when the CRC64 feature has been enabled for the bucket. • The CRC64 value of the entire object is returned for a partial download. • This parameter is not supported for POSIX or SFS objects. **Value range:** A 64-bit CRC value calculated based on the ECMA-182 standard **Default value:** None
storageClass	StorageClassEnum	No	**Explanation:** 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. **Value range**: See **Table 8-133**. **Default value**: None

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

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

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Table 8-135 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-132**.

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Parameter	Type	Description
metadata	ObjectMetadata	**Explanation:** Object metadata. For details, see **Table 8-134**.
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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);
                if (n > 0) {
                    System.out.println(new String(buf, 0, n));
                }
            }
            System.out.println("GetObject successfully");
            in.close();
        } catch (ObsException e) {
```

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```
            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();
        }
    }
}
```

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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);
                if (n > 0) {
                    System.out.println(new String(buf, 0, n));
                }
            }
            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.
```

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```
            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();
        }
    }
}
```

8.1.2.4 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).
- You can obtain the download progress when downloading an object in streaming, partial, or resumable mode.

Method

GetObjectRequest.setProgressListener(**ProgressListener** progressListener)

Request parameters

Table 8-136 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
progressListener	**ProgressListener**	Yes	**Explanation:** Data transmission listener used for obtaining the progress. For details, see **Table 8-137**.

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Table 8-137 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-138**.

Table 8-138 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-139**.

Table 8-139 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.1.2.5 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).
- Objects in the storage class can be downloaded only when they are restored.

Method

obsClient.getObject(**GetObjectRequest request**)

Request Parameters

Table 8-140 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**GetObjectRequest**	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-141**.

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Table 8-141 GetObjectRequest

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

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
rangeStart	Long	No	**Explanation:** Start position for object download. **Value range**: A non-negative integer. **Default value**: None
rangeEnd	Long	No	**Explanation:** End position for object download. **Restrictions:** The upper limit of the value is the object length minus 1, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. 2. If a request includes **If-Unmodified-Since** or **If-Match** and the specified condition is not met, **412 Precondition Failed** will be returned. **Value range**: The value must contain 32 characters. **Default value**: None
ifNoneMatchTag	String	No	**Explanation:** 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. 2. If a request includes **If-Modified-Since** or **If-None-Match**, and the specified condition is not met, **304 Not Modified** will be returned. **Value range**: The value must contain 32 characters. **Default value**: None
IfModifiedSince	Date	No	**Explanation:** 1. The object is returned if it has been modified since the specified time; otherwise, an error is returned. 2. If a request includes **If-Modified-Since** or **If-None-Match**, and the specified condition is not met, **304 Not Modified** will be returned. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
IfUnmodifiedSince	Date	No	**Explanation:** 1. The object is returned if it has not been modified since the specified time; otherwise, an error is returned. 2. If a request includes **If-Unmodified-Since** or **If-Match** and the specified condition is not met, **412 Precondition Failed** will be returned. **Default value**: None
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** Additional information about the object. For details, see **Table 8-142**.
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener for obtaining the progress. For details, see **Table 8-143**.
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

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Table 8-142 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

Table 8-143 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-144**. **Default value**: None

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Table 8-144 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-145**. **Default value**: None

Table 8-145 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

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Table 8-146 Owner

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

Table 8-147 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-148 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the object must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-147**. **Default value**: None

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

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

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Responses

Table 8-149 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-146**.

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Parameter	Type	Description
metadata	ObjectMetadata	**Explanation:** Object metadata. For details, see **Table 8-148**.
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.1.2.6 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).

Method

obsClient.getObject(**GetObjectRequest request**)

Request Parameters

Table 8-150 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**GetObjectRequest**	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-151**.

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Table 8-151 GetObjectRequest

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

Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
rangeStart	Long	No	**Explanation:** Start position for object download. **Value range**: A non-negative integer. **Default value**: None
rangeEnd	Long	No	**Explanation:** End position for object download. **Restrictions:** The upper limit of the value is the object length minus 1, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
ifNoneMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
IfModifiedSince	Date	No	**Explanation:** The object is returned if it has been modified since the specified time; otherwise, an error is returned. **Default value**: None
IfUnmodifiedSince	Date	No	**Explanation:** The object is returned if it has not been modified since the specified time; otherwise, an error is returned. **Default value**: None
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** Additional information about the object. For details, see **Table 8-152**.
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener for obtaining the progress. For details, see **Table 8-153**.

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Table 8-152 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

Table 8-153 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-154**. **Default value**: None

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Table 8-154 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-155**. **Default value**: None

Table 8-155 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

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Table 8-156 Owner

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

Table 8-157 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-158 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the object must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-157**. **Default value**: None

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

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

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Responses

Table 8-159 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-156**.

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Parameter	Type	Description
metadata	ObjectMetadata	**Explanation:** Object metadata. For details, see **Table 8-158**.
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: 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.ObjectRepleaceMetadata;
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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");
            ObjectRepleaceMetadata replaceMetadata = new ObjectRepleaceMetadata();
            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());
```

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```
            // 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();
        }
    }
}
```

8.1.2.7 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).

Method

obsClient.getObject(**GetObjectRequest request**)

Request Parameters

Table 8-160 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**GetObjectRequest**	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-161**.

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Table 8-161 GetObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
rangeStart	Long	No	**Explanation:** Start position for object download. **Value range**: A non-negative integer. **Default value**: None
rangeEnd	Long	No	**Explanation:** End position for object download. **Restrictions:** The upper limit of the value is the object length minus 1, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
ifNoneMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
IfModifiedSince	Date	No	**Explanation:** The object is returned if it has been modified since the specified time; otherwise, an error is returned. **Default value**: None
IfUnmodifiedSince	Date	No	**Explanation:** The object is returned if it has not been modified since the specified time; otherwise, an error is returned. **Default value**: None
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** Additional information about the object. For details, see **Table 8-162**.
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener for obtaining the progress. For details, see **Table 8-163**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-162 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

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Table 8-163 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-164**. **Default value**: None

Table 8-164 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-165**. **Default value**: None

Table 8-165 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes()	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

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Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

Table 8-166 Owner

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

Table 8-167 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-168 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the object must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-167**. **Default value**: None

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

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

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Responses

Table 8-169 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-166**.

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Parameter	Type	Description
metadata	ObjectMetadata	**Explanation:** Object metadata. For details, see **Table 8-168**.
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.1.2.8 Restoring a Cold Object (SDK for Java)

Function

Cold objects must first be restored before you can download them. Cold 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 object, you must be the bucket owner or have the required permission (**obs:object:RestoreObject** in IAM or **RestoreObject** in a bucket policy.)
- To prolong the validity period of the data restored, you can repeatedly restore the 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.
- The object specified in **ObsClient.restoreObject** must be in the Cold storage class. Otherwise, an exception will be thrown when you call this API.

Method

obsClient.restoreObject(**RestoreObjectRequest request**)

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Request Parameters

Table 8-170 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	RestoreObjectRequest	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-171**.

Table 8-171 RestoreObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** **Default value**: None. If this parameter is left blank, the latest version of the object is specified.
days	int	Yes	**Explanation:** After an object is restored, a Standard copy of it is generated. This parameter specifies how long the Standard copy can be retained, that is, the validity period of the restored object. **Restrictions:** The value must be a positive integer. **Value range**: The value ranges from 1 to 30, in days. **Default value**: None
tier	**RestoreTierEnum**	No	**Explanation:** The restore option, which indicates the time spent on restoring the object. **Value range**: For details, see **Table 8-172**. **Default value**: Standard

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Table 8-172 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 8-173 RestoreObjectStatus

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

Code Examples

This example restores object **objectname** from the Cold 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");
```

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```
        // (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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Restore the Cold 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();
        }
    }
}
```

8.1.2.9 Downloading an Object - Resumable (SDK for Java)

Function

- 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.

- 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 - Range-Based (SDK for Java)**.
- 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).
- Simultaneous resumable downloads of the same object by multiple processes or threads may cause tasks to overwrite each other, resulting in data inconsistency. The concurrent capability (**taskNum**) provided by the API is not subject to this limitation.

Method

obsClient.downloadFile(**DownloadFileRequest request**)

Request Parameters

Table 8-174 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**DownloadFileRequest**	Yes	**Explanation:** Request parameters for downloading a large object. For details, see **Table 8-175**.

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Table 8-175 DownloadFileRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
downloadFile	String	No	**Explanation:** Full path of the local directory to which the object is downloaded. **Default value**: If the value of this parameter is left blank, the downloaded object is saved in the directory where the program is executed.
partSize	long	No	**Explanation:** Part size. **Value range**: The value ranges from 100 KB to 5 GB, in bytes. **Default value**: 9 MB
taskNum	int	No	**Explanation:** Maximum number of parts that can be downloaded concurrently in a multipart download **Value range**: The value is a positive integer and cannot exceed the result of the file size divided by the part size (rounded up). **Default value**: **1**, indicating concurrent downloads are not used.
enableCheckpoint	boolean	No	**Explanation:** Whether to enable the resumable mode. **Value range**: **true**: The resumable mode is enabled. **false**: The resumable mode is disabled. **Default value**: **false**

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Parameter	Type	Mandatory (Yes/No)	Description
checkpointFile	String	No	**Explanation:** Path of a file generated for recording the progress of a resumable download. The file contains the information about parts and progress. **Restrictions:** This parameter is valid only in the resumable mode. **Default value**: If this parameter is left blank, the checkpoint file will be saved in the current directory.
enableCheckSum	boolean	No	**Explanation:** Whether to verify the file to download. If this function is enabled, before each task restarts, the system verifies whether the file to download is the one used during task initialization. **Restrictions:** This parameter is valid only in the resumable mode. **Value range**: **true**: The file is verified. **false**: The file is not verified. **Default value**: **false**
versionId	String	No	**Explanation:** Object version ID, for example, **G001117FCE89978B0000401205D5DC9**. **Value range**: The value must contain 32 characters. **Default value**: None. If this parameter is left blank, the latest version of the object is obtained.

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Parameter	Type	Mandatory (Yes/No)	Description
needCalculateCRC64	boolean	No	**Explanation:** Whether to automatically calculate and verify the CRC64 value of the downloaded data. **Restrictions:** This parameter is not supported for POSIX or SFS objects. **Value range:** **true**: The SDK calculates and verifies CRC64. **false**: CRC64 is not calculated. **Default value:** **false**
ifModifiedSince	Date	No	**Explanation:** Returns the object if it has been modified since the specified time; otherwise, an error is returned. **Default value**: None
ifUnmodifiedSince	Date	No	**Explanation:** Returns the object if it has not been modified since the specified time; otherwise, an error is returned. **Default value**: None
ifMatchTag	String	No	**Explanation:** Returns the object content if the object's ETag is the same as the value of this parameter. Otherwise, an error is reported. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifNoneMatchTag	String	No	**Explanation:** Returns the object content if the object's ETag is different from the value of this parameter. Otherwise, an error is reported. **Default value**: None
progressListener	**Progress Listener**	No	**Explanation:** Data transmission listener for obtaining the download progress. For details, see **Table 8-176**.
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-176 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-177**. **Default value**: None

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Table 8-177 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-178**. **Default value**: None

Table 8-178 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Table 8-179 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-180 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the object must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-179**. **Default value**: None

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

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

Responses

Table 8-181 DownloadFileResult

Parameter	Type	Description
objectMetadata	**ObjectMetadata**	**Explanation:** Object metadata. For details, see **Table 8-180**.

Sample Code

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) {
```

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```
        // 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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

Sample Code (Downloading Objects with a Specified Prefix in Batches)

This example uses the resumable download API to download objects with the same prefix from an OBS bucket to a local directory in batches.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.DownloadFileRequest;
import com.obs.services.model.ListObjectsRequest;
import com.obs.services.model.ObjectListing;
import com.obs.services.model.ObsObject;
import java.io.File;
import java.util.ArrayList;
import java.util.List;
```

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```
public class DownloadFolder {
    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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        String bucketName = "you-bucket-name";
        String remotePrefix = "remote_prefix";
        String localFolder = "you/local/path";
        List<String> failedList = new ArrayList<>();
        // Normalize remotePrefix: If the value ends with a slash (/), remove the separator at the end to ensure that the relative path obtained by substring starts with a slash (/).
        if (remotePrefix.endsWith("/")) {
            remotePrefix = remotePrefix.substring(0, remotePrefix.length() - 1);
        }
        // Normalize localFolder: Ensure that the value ends with File.separator to prevent the directory name and file name from being concatenated when the value is combined with a relative path.
        if (!localFolder.endsWith(File.separator)) {
            localFolder = localFolder + File.separator;
        }
        int prefixLength = remotePrefix.length();
        ListObjectsRequest listRequest = new ListObjectsRequest();
        listRequest.setPrefix(remotePrefix);
        listRequest.setBucketName(bucketName);
        listRequest.setEncodingType("url");
        ObjectListing objects;
        for (int i = 1; ; i++) {
            System.out.println("Start to Download page " + i);
            try {
                objects = obsClient.listObjects(listRequest);
            } catch (ObsException e) {
                System.out.println("Request Error, RequestID is: " + e.getErrorRequestId());
                throw e;
            }
            for (ObsObject object : objects.getObjects()) {
                String objectKey = object.getObjectKey();
                // Skip objects whose keys end with a slash (/) and only create the corresponding local directories.
                if (objectKey.endsWith("/")) {
                    String folderPath = localFolder + objectKey.substring(prefixLength).replace("/", File.separator);
                    createDownloadFolder(folderPath);
                    continue;
                }
                DownloadFileRequest downloadRequest = new DownloadFileRequest(bucketName, objectKey);
                // Use the complete object name as the local file name.
                String downloadPath = localFolder + objectKey.replace("/", File.separator);
                downloadRequest.setDownloadFile(downloadPath);
                // Set the number of concurrent downloads to 10.
                downloadRequest.setTaskNum(10);
                // Perform a simple retry three times to prevent single-object download failures caused by transient network errors.
                boolean success = false;
```

```
                for (int retry = 1; retry <= 3; retry++) {
                    try {
                        System.out.println("Start to download object [" + objectKey
                                + "] to [" + downloadPath + "] (retry " + retry + ")");
                        obsClient.downloadFile(downloadRequest);
                        success = true;
                        break;
                    } catch (ObsException e) {
                        System.out.println("Failed to download " + objectKey
                                + " RequestID: " + e.getErrorRequestId() + " (retry " + retry + ")");
                    } catch (Exception e) {
                        System.out.println("Failed to download " + objectKey + " (retry " + retry + ")");
                    }
                }
                if (!success) {
                    failedList.add(objectKey);
                }
            }
            if (!objects.isTruncated()) {
                break;
            }
            // Use the returned next_marker as the marker for the next listing.
            listRequest.setMarker(objects.getNextMarker());
        }
        failedList.forEach(item -> System.out.println("Failed to download " + item + ", please try again"));
    }
    private static void createDownloadFolder(String downloadPath) {
        File file = new File(downloadPath);
        if (file.mkdirs()) {
            System.out.println("The path " + downloadPath + " is created");
        }
    }
}
```

8.1.3 Deleting an Object (SDK for Java)

8.1.3.1 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).
- If versioning is not enabled for a bucket, deleted objects cannot be recovered.

Method

obsClient.deleteObject(**DeleteObjectRequest request**)

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Request Parameters

Table 8-182 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	DeleteObjectRequest	Yes	**Explanation:** Request parameters for deleting an object. For details, see **Table 8-183**.

Table 8-183 DeleteObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None

Responses

Table 8-184 DeleteObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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Parameter	Type	Description
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
versionId	String	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
deleteMarker	boolean	**Explanation:** Whether the deleted object is a delete marker. **Value range**: • **true**: The deleted object is a delete marker. • **false**: The deleted object is not a delete marker. **Default value**: false
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.3.2 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).
- 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.

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- After concurrent tasks are assigned, if an internal error occurs during the 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 8-185 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
deleteRequest	**DeleteObjectsRequest**	Yes	**Explanation:** Request parameters for deleting objects in batches. For details, see **Table 8-186**.

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Table 8-186 DeleteObjectsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
keyAndVersions	List<**KeyAndVersion**>	Yes	**Explanation:** List of objects to be deleted. For details, see **Table 8-187**.

Parameter	Type	Mandatory (Yes/No)	Description
quiet	boolean	No	**Explanation:** Response mode to the request for deleting objects in a batch. **Value range**: • **false**: The detailed mode. Results of both successful and failed deletions are returned. • **true**: The quiet mode. Only results of failed deletions are returned. **Default value**: **false**

Table 8-187 KeyAndVersion

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None. If this parameter is left blank, the latest version of the object is deleted.

Responses

Table 8-188 DeleteObjectsResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
deletedObjectResults	List<**DeleteObjectResult**>	**Explanation:** Response results of the request for deleting objects in a batch. For details, see **Table 8-189**.
errorResults	List<**ErrorResult**>	**Explanation:** List of objects that fail to be deleted. For details, see **Table 8-190**.

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Table 8-189 DeleteObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
versionId	String	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
deleteMarker	boolean	**Explanation:** Whether the deleted object is a delete marker. **Value range**: • **true**: The deleted object is a delete marker. • **false**: The deleted object is not a delete marker. **Default value**: **false**

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Parameter	Type	Description
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

Table 8-190 ErrorResult

Parameter	Type	Description
versionId	String	**Explanation:** Object version ID.
errorCode	String	**Explanation:** Error code for the failed deletion.
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
message	String	**Explanation:** Error message for the failed deletion.

Sample Code: Deleting All Objects from a Bucket

This example batch deletes all objects in bucket **examplebucket**. Exercise caution when performing this operation.

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```
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;
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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 example uses the verbose mode. 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);
                    // Print the deleted objects.
                    System.out.println("DeletedObjectResults:"+ deleteResult.getDeletedObjectResults());
                    // Print the objects that were not 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());
```

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

Sample Code: Deleting All Objects with a Specified Prefix or in a Specified Directory

This example deletes all objects whose names start with **exampleObjectPrefix** in bucket **example-bucket** in a batch. Note that if **exampleObjectPrefix** is left blank, **all objects in the bucket will be deleted**.

```
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.util.Map;

public class DeleteObjects002 {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");

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

        try {
            String exampleBucket = "example-bucket";
            String exampleObjectPrefix = "exampleObjectPrefix";
            // Batch delete the objects.
            ListVersionsRequest request = new ListVersionsRequest(exampleBucket);
            // Delete 100 objects at a time.
            request.setMaxKeys(100);
            request.setPrefix(exampleObjectPrefix);
            ListVersionsResult result;
            do {
                result = obsClient.listVersions(request);
                DeleteObjectsRequest deleteRequest = new DeleteObjectsRequest(exampleBucket);
                // deleteRequest.setQuiet(true);
                // This example uses the verbose mode. To use the quiet mode, add this line of code.
                for (VersionOrDeleteMarker v : result.getVersions()) {
                    // Obtain object names and version IDs.
                    deleteRequest.addKeyAndVersion(v.getKey(), v.getVersionId());
                }
                if(deleteRequest.getKeyAndVersions().length > 0){
```

```
                DeleteObjectsResult deleteResult = obsClient.deleteObjects(deleteRequest);
                // Print the deleted objects.
                System.out.println("DeletedObjectResults:"+ deleteResult.getDeletedObjectResults());
                // Print the objects that were not 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());
        Map<String, String> headers = e.getResponseHeaders();// Check Map entries and print all headers
associated with the error.
        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();
    } catch (Exception e) {
        System.out.println("deleteObjects failed");
        // Print other error information.
        e.printStackTrace();
    }
  }
}
```

Sample Code: Deleting All Objects in a Folder

This example deletes all objects in the **test** folder in the **examplebucket** bucket with versioning disabled.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.*;
import java.io.IOException;
import java.util.Map;

public class DeleteObjects003 {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        // String endPoint = System.getenv("ENDPOINT");
```

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```
        // Create a single instance of ObsClient.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String exampleBucket = "examplebucket";
            String exampleObjectPrefix = "test/";
            ListObjectsRequest listObjectsRequest = new ListObjectsRequest(exampleBucket);
            listObjectsRequest.setMaxKeys(100);
            listObjectsRequest.setPrefix(exampleObjectPrefix);
            ObjectListing objectListing;

            do {
                objectListing = obsClient.listObjects(listObjectsRequest);
                DeleteObjectsRequest deleteRequest = new DeleteObjectsRequest(exampleBucket);
                // Note that this example uses the detailed mode by default. In detailed mode, the server returns the list of objects that are successfully deleted.
                // To use the simple mode (only objects that fail to be deleted are returned), add the following code: deleteRequest.setQuiet(true);
                // deleteRequest.setQuiet(true);
                for (ObsObject object : objectListing.getObjects()) {
                    deleteRequest.addKeyAndVersion(object.getObjectKey(), null);
                }

                if (deleteRequest.getKeyAndVersions().length > 0) {
                    DeleteObjectsResult deleteResult = obsClient.deleteObjects(deleteRequest);
                    // Print the deleted objects.
                    System.out.println("DeletedObjectResults:" + deleteResult.getDeletedObjectResults());
                    // Print the objects that were not deleted.
                    System.out.println("ErrorResults:" + deleteResult.getErrorResults());
                } else {
                    System.out.println("No object to delete");
                }
                listObjectsRequest.setMarker(objectListing.getNextMarker());
            } while (objectListing.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());
            Map<String, String> headers = e.getResponseHeaders();
            // Check all Map entries and print all headers associated with the error.
            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();
        } catch (Exception e) {
            System.out.println("deleteObjects failed");
            // Print other error information.
            e.printStackTrace();
        }

}
}
```

8.1.4 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).
- 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 8-191 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**PutObjectRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-192**.

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Table 8-192 PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	**ObjectMetadata**	No	**Explanation:** Object metadata. For details, see **Table 8-199**. **Default value**: None
acl	**AccessControlList**	No	**Explanation:** ACL that can be pre-defined when an object is created. Refer to **Table 8-200** to choose the option you need. **Value range**: • To use a pre-defined ACL, see **Table 8-193** for the available options. • To use a user-defined ACL, see **Table 8-200** to configure the required parameters. **Default value**: None
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-197**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call. **Value range**: An integer greater than 0, in days. **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 8-194**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-193 Pre-defined 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 abort 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.

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Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 8-194 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-195**. **Default value**: None

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Table 8-195 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-196**. **Default value**: None

Table 8-196 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Table 8-197 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.

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

Constant	Default Value
AES256	AES256

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Table 8-198 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-199 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the object must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-198**. **Default value**: None

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

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

Table 8-200 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-201**.

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Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-202**.

Table 8-201 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-202 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-204**. Grantee (user group) information. For details, see **Table 8-205**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-203**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 8-203 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 8-204 CanonicalGrantee

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

Table 8-205 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Responses

Table 8-206 PutObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** 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. **Value range**: See **Table 8-15**. **Default value**: None

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Parameter	Type	Description
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version ID will be returned. **Value range**: The value must contain 32 characters. **Default value**: None
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An object created by an upload or copy operation has a unique ETag. **Value range**: The value must contain 32 characters. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
```

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

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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]));
            // Upload object objectname to the created parent_directory/ folder. The object content is Hello
OBS.
            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();
        }
    }
}
```

8.1.5 Checking Whether an Object Exists (SDK for Java)

Function

This API is used to check 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:object:GetObject** in IAM or **GetObject** in a bucket policy).

Method

obsClient.doesObjectExist(final GetObjectMetadataRequest request)

Request Parameters

Table 8-207 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	GetObjectMetadataRequest	Yes	**Explanation:** Request parameters for checking whether an object exists. For details, see Table 8-208.

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Table 8-208 GetObjectMetadataRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path of the object that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
userHeaders	HashMap<String, String>	No	**Explanation:** User header list. In **HashMap**, the **String** key and value indicate the name and value of the user header field respectively. The SDK does not process the **userHeaders** and instead transparently transmits it to the server for later use. **Value range**: The value must contain 32 characters. **Default value**: None
encodeHeaders	boolean	No	**Explanation:** Specifies whether the object metadata API allows encoding and decoding of HTTP headers. **Value range**: **true**: HTTP headers are encoded and decoded. **false**: HTTP headers are not encoded or decoded. **Default value**: **true**

Constant	Default Value
AES256	AES256

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Constant	Default Value
KMS	kms
AES256	AES256

Responses

Table 8-209 Response headers

Method	Return Value Type	Description
doesObjectExist(final GetObjectMetadataRequest request)	boolean	Whether the object exists in the bucket.

Sample Code

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.1.6 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).
- 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 Cold storage class, you must restore it first.

Method

obsClient.copyPart(**CopyPartRequest request**)

Request Parameters

Table 8-210 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**CopyPartRequest**	Yes	**Explanation:** Request parameters for copying an object. For details, see **Table 8-211**.

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Table 8-211 CopyPartRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
sourceObjectKey	String	Yes	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

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Parameter	Type	Mandatory (Yes/No)	Description
destinationObject-Key	String	Yes	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
byteRangeStart	Long	No	**Explanation:** Start position for the multipart copy **Value range**: A non-negative integer, in bytes. **Default value**: 0
byteRangeEnd	Long	No	**Explanation:** End position for the multipart copy **Restrictions:** The value must be greater than that of **RangeStart**. The upper limit of the value is the object length minus 1, in bytes. **Value range**: A non-negative integer, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Explanation:** Version ID of the source object, for example, **G001117FCE89978B0000401205D5DC9A**. If the source object has multiple versions, you can specify this parameter. **Value range**: The value must contain 32 characters. **Default value**: None
partNumber	int	Yes	**Explanation:** Part number. **Value range:** An integer ranging from 1 to 10,000 **Default value**: None
uploadId	String	Yes	**Explanation:** Multipart upload ID, for example, **000001648453845DBB78F2340DD460D8**. **Value range**: The value must contain 32 characters. **Default value**: None

Constant	Default Value
AES256	AES256

Constant	Default Value
KMS	kms

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Constant	Default Value
AES256	AES256

Responses

Table 8-212 CopyPartResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
partNumber	int	**Explanation:** Part number. **Value range**: An integer ranging from 1 to 10000. **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** 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 **A** when an object is uploaded and is **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. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
lastModified	java.util.Date	**Explanation:** Last time the target part was modified. **Default value**: None

Sample Code

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;
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.1.7 Copying an Object (SDK for Java)

Function

This API copies an object stored in OBS to another path, with a copy created during the process. You can create a copy of an object up to 5 GB in a single operation.

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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).
- 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 Cold storage class, you must restore it first.

Method

obsClient.copyObject(**CopyObjectRequest request**)

Request Parameters

Table 8-213 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**CopyObjectRequest**	Yes	**Explanation:** Request parameters for copying an object. For details, see **Table 8-214**.

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Table 8-214 CopyObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Target bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those

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Parameter	Type	Mandatory (Yes/No)	Description
			set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
acl	AccessControlList	No	**Explanation:** An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 8-215 for the available options. • To use a user-defined ACL, see Table 8-216 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

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Parameter	Type	Mandatory (Yes/No)	Description
successRedirect-Location	String	No	**Explanation:** Address (URL) to which a successfully answered request is redirected. • If the value is valid and the request is successful, OBS returns status code **303**. **Location** contains **SuccessActionRedirect** as well as the bucket name, object name, and object ETag. • If the value is invalid, OBS ignores this parameter. In such case, the **Location** header is the object address, and OBS returns a status code based on whether the operation succeeds or fails. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
sourceBucketName	String	Yes	**Explanation:** Name of the source bucket. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those

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Parameter	Type	Mandatory (Yes/No)	Description
			set in the first creation request. **Default value**: None
sourceObjectKey	String	Yes	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
newObjectMetadata	**ObjectMetadata**	No	**Explanation:** User-defined metadata of the target object. For details, see **Table 8-222**. **Restrictions:** **replaceMetadata** must be used together with **newObjectMetadata**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
replaceMetadata	boolean	No	**Explanation:** Whether to rewrite the metadata of the source object. **Restrictions:** **replaceMetadata** must be used together with **newObjectMetadata**. **Value range**: **true**: The metadata of the source object is rewritten. **false**: The metadata of the source object is not rewritten. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifModifiedSince	java.util.Date	No	**Explanation:** The source object is copied if it has been modified since the specified time; otherwise, an exception is thrown. **Restrictions:** • If the object copy request includes **ifUnmodifiedSince**, **ifMatchTag**, **ifModifiedSince**, or **ifNoneMatchTag**, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code **412 precondition failed**. • **ifModifiedSince** and **ifNoneMatchTag** can be used together. So do **ifUnmodifiedSince** and **ifMatchTag**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifUnmodifiedSince	java.util.Date	No	**Explanation:** If the source object has not been modified since the specified time, it is copied. Otherwise, an exception is thrown. **Restrictions:** • If the object copy request includes **ifUnmodifiedSince**, **ifMatchTag**, **ifModifiedSince**, or **ifNoneMatchTag**, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code **412 precondition failed**. • **ifModifiedSince** and **ifNoneMatchTag** can be used together. So do **ifUnmodifiedSince** and **ifMatchTag**. **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. **Restrictions:** • If the object copy request includes **ifUnmodifiedSince**, **ifMatchTag**, **ifModifiedSince**, or **ifNoneMatchTag**, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code **412 precondition failed**. • **ifModifiedSince** and **ifNoneMatchTag** can be used together. So do **ifUnmodifiedSince** and **ifMatchTag**. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifNoneMatchTag	String	No	**Explanation:** 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. **Restrictions:** • If the object copy request includes **ifUnmodifiedSince**, **ifMatchTag**, **ifModifiedSince**, or **ifNoneMatchTag**, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code **412 precondition failed**. • **ifModifiedSince** and **ifNoneMatchTag** can be used together. So do **ifUnmodifiedSince** and **ifMatchTag**. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Explanation:** Source object version ID. **Value range**: The value must contain 32 characters. **Default value**: None

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

Table 8-215 Pre-defined 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.

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Constant	Description
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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

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Table 8-216 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-217**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-218**.

Table 8-217 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-218 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-220**. Grantee (user group) information. For details, see **Table 8-221**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-219**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 8-219 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 8-220 CanonicalGrantee

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

Table 8-221 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Table 8-222 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-223**. **Default value**: None

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

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

Table 8-223 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Responses

Table 8-224 CopyObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
lastModified	java.util.Date	**Explanation:** Last time the target object was modified. **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** ETag of the target object. Base64-encoded, 128-bit MD5 value of an object. ETag is the unique identifier of the object content and is used to determine whether the object content is changed. For example, if the ETag value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of an object, not its metadata. Objects created by the upload and copy operations have unique ETags. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
crc64	str	**Explanation:** The 64-bit CRC value calculated for the object based on the ECMA-182 standard. The CRC64 value is the unique identifier of the object content. It can be used to determine whether the object content is changed. If an object has different CRC64 values when being uploaded and downloaded, its content has been changed. CRC64 reflects changes to the content of the object, not its metadata. **Restrictions:** ● This parameter is returned when the CRC64 value was verified for the source object, or when the CRC64 feature has been enabled for the bucket. The returned CRC64 value is for the target object. ● This parameter is not supported for POSIX or SFS objects. **Value range:** A 64-bit CRC value calculated based on the ECMA-182 standard **Default value:** None

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Parameter	Type	Description
versionId	String	**Explanation:** Version ID of the target object. **Value range**: The value must contain 32 characters. **Default value**: None
copySourceVersionId	String	**Explanation:** Version ID of the source object. **Value range**: The value must contain 32 characters. **Default value**: None
storageClass	StorageClassEnum	**Explanation:** Storage class of the target object. **Value range**: See **Table 8-223**. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
```

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```
        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 properties 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;
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

```
        try {
            // Rewrite object properties when copying an object.
            CopyObjectRequest request = new CopyObjectRequest("sourcebucketname", "sourceobjectname",
"destbucketname", "destobjectname");
            // Rewrite object properties. setReplaceMetadata(true) and setNewObjectMetadata must be
used together.
            request.setReplaceMetadata(true);
            ObjectMetadata newMetadata = new ObjectMetadata();
            newMetadata.setContentType("image/jpeg");
            request.setNewObjectMetadata(newMetadata);
            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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        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 its ACL

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
"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();
        }
    }
}
```

8.1.8 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).
- 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**)

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Request Parameters

Table 8-225 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ListObjectsRequest**	Yes	**Explanation:** Request parameters for listing the objects in a bucket. For details, see **Table 8-226**.

Table 8-226 ListObjectsRequest

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

Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	No	**Explanation:** Name prefix that the objects to be listed must contain. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If this parameter is left blank and there are no other filtering criteria, all objects in the bucket will be returned. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
marker	String	No	**Explanation:** 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. Assume that you have the following objects: **test/a**, **test/b**, **test/c**, and **test/d**. If you specify **test/b** as the marker, **test/c** and **test/d** are returned. **Restrictions:** This parameter is only available for listing objects with a single version. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
maxKeys	int	No	**Explanation:** The maximum number of objects returned in the response in alphabetical order. **Value range**: The value ranges from 1 to 1,000. If the specified value is beyond this range, only 1,000 objects are returned. **Default value**: 1000

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Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	**Explanation:** Object names are grouped by this parameter, which is often used with **Prefix**. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **CommonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **CommonPrefixes**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, files **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix. If only **delimiter** is set to **d**, files **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix, and **bbcde** is grouped separately into another **CommonPrefixes** with **bbcd** as the prefix. For a 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 **[delimiter=/]** to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Responses

Table 8-227 ObjectListing

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

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Parameter	Type	Description
prefix	String	**Explanation:** Object name prefix. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If this parameter is left blank and there are no other filtering criteria, all objects in the bucket will be returned. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
objectSummaries	List<**ObsObject**>	**Explanation:** List of objects in the bucket. For details, see **Table 8-228**.
commonPrefixes	List<String>	**Explanation:** List of object name prefixes grouped according to the **delimiter** parameter (if specified) **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
truncated	boolean	**Explanation:** 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. **Value range**: **true**: Not all objects are returned. **false**: All objects are returned. **Default value**: None

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Parameter	Type	Description
marker	String	**Explanation:** 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: **test/a**, **test/b**, **test/c**, and **test/d**. If you specify **test/b** as the marker, **test/c** and **test/d** are returned. **Restrictions:** This parameter is only available for listing objects with a single version. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
maxKeys	int	**Explanation:** The maximum number of objects returned in the response in alphabetical order. **Value range**: The value ranges from 1 to 1,000. If the specified value is beyond this range, only 1,000 objects are returned. **Default value**: 1000

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Parameter	Type	Description
delimiter	String	**Explanation:** Object names are grouped by this parameter, which is often used with **Prefix**. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **CommonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **CommonPrefixes**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, files **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix. If only **delimiter** is set to **d**, files **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix, and **bbcde** is grouped separately into another **CommonPrefixes** with **bbcd** as the prefix. For a 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 **[delimiter=/]** to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
nextMarker	String	**Explanation:** 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 **Marker** in the subsequent request to list the remaining objects. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
location	String	**Explanation:** Region where a bucket is located.
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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Table 8-228 ObsObject

Parameter	Type	Description
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
bucketName	String	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectContent	InputStream	**Explanation:** The data stream of the object. **Default value**: None

Parameter	Type	Description
owner	Owner	**Explanation:** Object owner. This parameter contains the domain ID and name of the object owner. For details, see Table 8-229. **Default value**: None
metadata	ObjectMetadata	**Explanation:** Object metadata. **Value range**: Object metadata. For details, see Table 8-231. **Default value**: None
objectType	ObjectTypeEnum	**Explanation:** Type of the object. **Value range:** Object type. For details, see Table 8-232. **Default value:** None

Table 8-229 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-230 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Table 8-231 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.

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Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** ● The MD5 value of the object must be Base64 encoded. ● If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None

Parameter	Type	Mandatory (Yes/No)	Description
storageClass	StorageClassEnum	No	**Explanation:** 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. **Value range**: See Table 8-230. **Default value**: None
webSiteRedirectLocation	String	No	**Explanation:** If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to. To another object in the same bucket: **WebsiteRedirectLocation:/anotherPage.html** To an external URL: **WebsiteRedirectLocation:http://www.example.com/** **Restrictions:** • The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. • OBS only supports redirection for objects in the root directory of a bucket. **Default value**: None
nextPosition	long	No	**Explanation:** Start position for the next append upload. **Value range**: 0 to the object length, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
appendable	boolean	No	**Explanation:** Whether the object is appendable. **Value range**: **true**: The object is appendable. **false**: The object is not appendable. **Default value**: None

Table 8-232 ObjectTypeEnum

Constant	Default Value	Description
NORMAL	NORMAL	Normal objects
APPENDABLE	APPENDABLE	Appendable objects

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
```

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```
            // 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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 region where the bucket is to be created.
       String endPoint = "https://your-endpoint";
       // Obtain an endpoint using environment variables or import it in other ways.
       //String endPoint = System.getenv("ENDPOINT");

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

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```
            // 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            // 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            // 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
    // 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);
        }
    }
}
```

Code Example: Recursively Listing Objects in a Sub-folder

This example uses the **listObjectsByPrefix** function to 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.

8.2 Lifecycle Rules (SDK for Java)

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8.2.1 Configuring Lifecycle Rules (SDK for Java)

Function

You can configure lifecycle rules to periodically delete objects or transition objects between storage classes. 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

- Objects in the Warm storage class have a minimum storage period of 30 days and those in the Cold storage class have a minimum storage period of 90 days. After an object is transitioned to the Cold 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).
- 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 8-233 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**PutObjectRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-234**.

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Table 8-234 PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	ObjectMetadata	No	**Explanation:** Object metadata. For details, see Table 8-241. **Default value**: None
acl	AccessControlList	No	**Explanation:** An ACL that can be specified at bucket creation. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see Table 8-235 for the available options. • To use a user-defined ACL, see Table 8-242 to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-239**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
expires	int	No	**Explanation:** 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. **Restrictions:** • This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call. • Expired objects will be permanently deleted and cannot be recovered. **Value range**: An integer greater than 0, in days. **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 8-236**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-235 Pre-defined 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 abort 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.

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Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 8-236 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-237**. **Default value**: None

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Table 8-237 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-238**. **Default value**: None

Table 8-238 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Table 8-239 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.

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

Constant	Default Value
AES256	AES256

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Table 8-240 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-241 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the file.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the file. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-240**. **Restrictions:** **Default value**: None

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

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

Table 8-242 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-243**.

Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-244**.

Table 8-243 Owner

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

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Table 8-244 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-246**. Grantee (user group) information. For details, see **Table 8-247**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-245**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-245 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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Table 8-246 CanonicalGrantee

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

Table 8-247 GroupGrantee

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

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Responses

Table 8-248 PutObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
storageClass	**StorageClass Enum**	**Explanation:** Object storage class. If the storage class is Standard, this parameter is left blank. **Value range**: See **Table 8-240**. **Default value**: None
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version ID will be returned. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An uploaded object or copied object has a unique ETag. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

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.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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
```

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

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

8.2.2 Setting an Object Expiration Time (SDK for Java)

Function

ObsClient allows you to set the expiration time for an object when you upload it or after it has been uploaded.

Sample Code 1: Setting the Expiration Time for an Object When Uploading It

For the API reference, see **Uploading an Object - File-Based (SDK for Java)**.

This example sets the expiration time for object **objectkey** to 30 days when uploading it to bucket **bucketname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import java.io.File;
public class SetObjectExpiration001 {
    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
```

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```
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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            PutObjectRequest request = new PutObjectRequest ("bucketname", "objectkey");
            // localfile indicates the path of the local file to be uploaded, in which the file name must be
specified.
            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();
        }
    }
}
```

Sample Code 2: Setting the Expiration Time for an Uploaded Object

For the API reference, see **Configuring Object Metadata (SDK for Java)**.

The following code shows how to set the expiration time for object **objectname** in bucket **examplebucket**:

```
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 SetObjectExpiration002 {
    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");
```

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```
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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");
            HashMap<String, String> userHeaders = new HashMap<>();
            // Set the expiration time of the object to five days.
            userHeaders.put("x-obs-expires","5");
            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();
        }
    }
}
```

8.3 Object Tags (SDK for Java)

8.3.1 Setting Object Tags (SDK for Java)

Function

This API is used to add tags to or update tags of an object. An object tag is a key-value pair.

If there is no object version ID (indicated by **versionId**) contained in the request, you must have the **PutObjectTagging** permission. If you specify a version ID in a request, make sure that you have the **PutObjectTagging** and **PutObjectVersionTagging** permissions. By default, only the object owner can perform this operation. The object owner can grant this permission to others by using a bucket policy or a user policy.

Tags are added to the current version of an object by default. You can use the **versionId** parameter to add tags to any other version. If the version is a delete marker, OBS returns **404 Not Found**.

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Restrictions

- Object tags are now in open beta testing, and you can use them for free. Once the testing period is over, you will be billed for using object tags.
- To read or write object tags, you must have required permissions. Such permissions can be granted using bucket policies. By default, only the object owner can read or write the object's tags.
- You can add tags during PUT upload, multipart upload, simple upload, and copy operations, or after objects are uploaded.
- Setting or changing object tags does not change the object's LastModified time.
- Tags cannot be added to files in parallel file systems.
- An object can have up to 10 tags.
- Constraints on the tag key and value:

  A tag key is case sensitive and must be unique. It cannot be left blank or exceed 128 characters. The following characters are not allowed: ,/|<>=*\

  A tag value is case sensitive and can be left blank. It cannot exceed 255 characters. The following characters are not allowed: ,/|<>=*\

Method

obsClient.setObjectTagging(ObjectTaggingRequest request)

Request Parameters

Table 8-249 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ObjectTaggingRequest**	Yes	**Explanation:** Request parameters for adding tags to an object. For details, see **Table 8-250**.

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Table 8-250 ObjectTaggingRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions**: ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets with the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path of the object that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
objectTagResult	ObjectTagResult	Yes when setting tags	**Explanation:** Tags to be set on the object. **Value range:** See Table 8-251.

Table 8-251 ObjectTagResult

Parameter	Type	Mandatory (Yes/No)	Description
tagSet	TagSet	Yes (when used as a request parameter)	**Explanation:** Object tags, which are used to identify an object. For details, see Table 8-252. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
statusCode	int	No	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits indicating the status of a response. It ranges from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). **Default value**: None
responseHeaders	Map<String, Object>	No	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Table 8-252 TagSet

Parameter	Type	Mandatory (Yes/No)	Description
tags	List<**Tag**>	Yes	**Explanation:** Object tag list. For details, see **Table 8-253**.

Table 8-253 Tag

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	**Explanation:** Name of a tag. **Restrictions:** • This parameter must not be left blank or contain unprintable ASCII characters (0–31) or the following special characters: *<>\= • The tag keys in the same bucket must be unique. • The value can be up to 36 characters long. **Default value:** None
value	String	Yes	**Explanation:** Tag value. **Restrictions:** • This parameter can be left blank, but if specified, cannot include unprintable ASCII characters (0–31) and the following special characters: *<>\= • The value can be up to 43 characters long. **Default value:** None

Responses

Table 8-254 Response headers

Method	Return Value Type	Description
setObjectTagging(ObjectTaggingRequest request)	HeaderResponse	Results returned for the request to set object tags.

Table 8-255 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Code Examples

This example sets tags for object **exampleObjectKey** in bucket **examplebucketname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketTagInfo.TagSet;
import com.obs.services.model.ObjectTagResult;
import com.obs.services.model.ObjectTaggingRequest;
public class SetObjectTagging001 {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT")
        // Create an ObsClient instance.
        try (ObsClient obsClient = new ObsClient(ak, sk, endPoint)) {
            // Set object tags. Note that new tags set will overwrite all existing tags.
            String bucketName = "examplebucketname";
            String objectKey = "exampleObjectKey";
            String objectVersionId = "";
            ObjectTagResult objectTagResult = new ObjectTagResult();
            TagSet tagSet = new TagSet();
```

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```
            tagSet.addTag("tagKey1", "tagVal1");
            tagSet.addTag("tagKey2", "tagVal2");
            objectTagResult.setTagSet(tagSet);
            ObjectTaggingRequest objectTaggingRequest =
                    new ObjectTaggingRequest(bucketName, objectKey, objectVersionId, objectTagResult);
            obsClient.setObjectTagging(objectTaggingRequest);
            System.out.println("SetObjectTagging successfully");
        } catch (ObsException e) {
            System.out.println("SetObjectTagging 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("SetObjectTagging failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8.3.2 Obtaining Object Tags (SDK for Java)

Function

This API is used to obtain the tags of an object.

If there is no object version ID (indicated by **versionId**) contained in the request, you must have the **GetObjectTagging** permission. If you specify a version ID in a request, make sure that you have the **GetObjectTagging** and **GetObjectVersionTagging** permissions. By default, only the object owner can perform this operation. The object owner can grant this permission to others by using a bucket policy or a user policy.

OBS returns the tags of the current object version by default. You can use the **versionId** parameter to retrieve tags of any other version. If the version is a delete marker, OBS returns **404 Not Found**.

Restrictions

- Object tags are now in open beta testing, and you can use them for free. Once the testing period is over, you will be billed for using object tags.
- To read or write object tags, you must have required permissions. Such permissions can be granted using bucket policies. By default, only the object owner can read or write the object's tags.
- You can add tags during PUT upload, multipart upload, simple upload, and copy operations, or after objects are uploaded.
- Setting or changing object tags does not change the object's LastModified time.
- Tags cannot be added to files in parallel file systems.
- An object can have up to 10 tags.

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- Constraints on the tag key and value:

  A tag key is case sensitive and must be unique. It cannot be left blank or exceed 128 characters. The following characters are not allowed: ,/|<>=*\

  A tag value is case sensitive and can be left blank. It cannot exceed 255 characters. The following characters are not allowed: ,/|<>=*\

Method

obsClient.getObjectTagging(ObjectTaggingRequest request)

Request Parameters

Table 8-256 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ObjectTaggingRequest**	Yes	**Explanation:** Request parameters for obtaining the tags of an object. For details, see **Table 8-250**.

Responses

Table 8-257 Response headers

Method	Return Value Type	Description
getObjectTagging(ObjectTaggingRequest request)	**ObjectTagResult**	Results returned for the request to obtain object tags.

Table 8-258 ObjectTagResult

Parameter	Type	Description
tagSet	**TagSet**	**Explanation:** Object tags, which are used to identify an object. For details, see **Table 8-259**. **Default value:** None

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Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range:** A status code is a group of digits indicating the status of a response. It ranges from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). **Default value:** None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value:** None

Table 8-259 TagSet

Parameter	Type	Description
tags	List<**Tag**>	**Explanation:** Object tag list. For details, see **Table 8-260**.

Table 8-260 Tag

Parameter	Type	Description
key	String	**Explanation:** Name of a tag. **Default value:** None
value	String	**Explanation:** Tag value. **Default value:** None

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Code Examples

This example obtains the tags of object **exampleObjectKey** in bucket **examplebucketname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.BucketTagInfo.TagSet;
import com.obs.services.model.ObjectTagResult;
import com.obs.services.model.ObjectTaggingRequest;
import java.util.List;
public class GetObjectTagging001 {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT")
        // Create an ObsClient instance.
        try (ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint)) {
            // Obtain object tags.
            String bucketName = "examplebucketname";
            String objectKey = "exampleObjectKey";
            String objectVersionId = "";
            ObjectTaggingRequest objectTaggingRequest =
                    new ObjectTaggingRequest(bucketName, objectKey, objectVersionId, null);
            ObjectTagResult objectTagResult = obsClient.getObjectTagging(objectTaggingRequest);
            System.out.println("tags of " + objectKey + ":");
            List<TagSet.Tag> tags = objectTagResult.getTagSet().getTags();
            for (TagSet.Tag tag : tags) {
                System.out.println("tag key:" + tag.getKey() + ", tag value:" + tag.getValue());
            }
            System.out.println("GetObjectTagging successfully");
        } catch (ObsException e) {
            System.out.println("GetObjectTagging 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("GetObjectTagging failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8.3.3 Deleting Object Tags (SDK for Java)

Function

This API is used to delete tags of an object.

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If there is no object version ID (indicated by **versionId**) contained in the request, you must have the **DeleteObjectTagging** permission. If you specify a version ID in a request, make sure that you have the **DeleteObjectTagging** and **DeleteObjectVersionTagging** permissions. By default, only the object owner can perform this operation. The object owner can grant this permission to others by using a bucket policy or a user policy.

OBS deletes tags from the current object version by default. You can use the **versionId** parameter to delete tags from any other version. If the version is a delete marker, OBS returns **404 Not Found**.

Restrictions

This API is not available for parallel file systems.

Method

obsClient.deleteObjectTagging(ObjectTaggingRequest request)

Request Parameters

Table 8-261 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ObjectTaggingRequest**	Yes	**Explanation:** Request parameters for deleting the tags of an object. For details, see **Table 8-250**.

Responses

Table 8-262 Response headers

Method	Return Value Type	Description
deleteObjectTagging(ObjectTaggingRequest request)	**HeaderResponse**	Results returned for the request to delete object tags.

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Table 8-263 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Code Examples

This example deletes the tags of object **exampleObjectKey** in bucket **examplebucketname**.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.ObjectTaggingRequest;
public class DeleteObjectTagging001 {
    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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT")
        // Create an ObsClient instance.
        try (ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint)) {
            // Delete object tags.
            String bucketName = "examplebucketname";
            String objectKey = "exampleObjectKey";
            String objectVersionId = "";
            ObjectTaggingRequest objectTaggingRequest =
                    new ObjectTaggingRequest(bucketName, objectKey, objectVersionId, null);
            obsClient.deleteObjectTagging(objectTaggingRequest);
            System.out.println("DeleteObjectTagging successfully");
```

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```
        } catch (ObsException e) {
            System.out.println("DeleteObjectTagging 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("DeleteObjectTagging failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8.4 Object ACLs (SDK for Java)

8.4.1 Configuring an Object ACL (SDK for Java)

Function

Access control lists (ACLs) allow resource owners to grant other accounts the permissions to access resources. By default, only the resource owner has full control over resources when a bucket or object is created. That is, the bucket creator has full control over the bucket, and the object uploader has full control over the object. Other accounts do not have the permissions to access resources. If resource owners want to grant other accounts the read and write permissions on resources, they can use ACLs. ACLs grant permissions to accounts. After an account is granted permissions, both the account and its IAM users can access the resources. If an object is encrypted with SSE-KMS, the ACL configured for it is not in effect in the cross-tenant case.

An object ACL can be configured in any of the following ways:

1. **Code Example: Setting a Pre-defined ACL When Uploading the Object**
2. **Code Example: Setting a Pre-defined ACL for the Object**
3. **Code Example: Setting an ACL for the Object 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).
- An object can have a maximum of 100 rules in its ACL.

Method

obsClient.setObjectAcl(**SetObjectAclRequest request**)

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Request Parameters

Table 8-264 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	SetObjectAclRequest	Yes	**Explanation:** Request parameters for setting an object ACL. For details, see **Table 8-265**.

Table 8-265 SetObjectAclRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
acl	**AccessControlList**	Yes	**Explanation:** An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see **Table 8-266** for the available options. • To use a user-defined ACL, see **Table 8-267** to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

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Table 8-266 Pre-defined 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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

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Constant	Description
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 8-267 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	**Owner**	Yes	**Explanation:** Bucket owner information. For details, see **Table 8-268**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-269**.

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Table 8-268 Owner

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

Table 8-269 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-270**. Grantee (user group) information. For details, see **Table 8-271**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-272**. **Default value**: None

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

Table 8-270 CanonicalGrantee

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

Table 8-271 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Table 8-272 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Responses

Table 8-273 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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;
```

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 read and write.
            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 specifies a pre-defined ACL of private read and write for object **objectname** in **examplebucket**.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Set a predefined ACL for the object.
            // Set the object ACL to private read and write.
            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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
```

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

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

8.4.2 Obtaining an Object ACL (SDK for Java)

Function

Access control lists (ACLs) allow resource owners to grant other accounts the permissions to access resources. By default, only the resource owner has full control over resources when a bucket or object is created. That is, the bucket creator has full control over the bucket, and the object uploader has full control over the object. Other accounts do not have the permissions to access resources. If resource owners want to grant other accounts the read and write permissions on resources, they can use ACLs. ACLs grant permissions to accounts. After an account is granted permissions, both the account and its IAM users can access the resources. If an object is encrypted with SSE-KMS, the ACL configured for it is not in effect in the cross-tenant case.

This API obtains the ACL of an object in a specified bucket.

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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).

Method

obsClient.getObjectAcl(**GetObjectAclRequest request**)

Request Parameters

Table 8-274 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	GetObjectAclRequest	Yes	**Explanation:** Request parameters for obtaining an object ACL. For details, see **Table 8-275**.

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Table 8-275 GetObjectAclRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None

Responses

Table 8-276 AccessControlList

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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Parameter	Type	Description
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
owner	**Owner**	**Explanation:** Object owner. For details, see **Table 8-280**.
grants	Set<**GrantAndPermission**>	**Explanation:** Grantee information. For details, see **Table 8-277**.
delivered	boolean	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-277 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-278**. Grantee (user group) information. For details, see **Table 8-279**.

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Parameter	Type	Mandatory (Yes/No)	Description
permission	Permission	Yes	**Explanation:** Permissions to grant. **Value range**: See Table 8-281. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-278 CanonicalGrantee

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

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Table 8-279 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 8-280 Owner

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

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Table 8-281 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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

8.5 Object Metadata (SDK for Java)

8.5.1 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).
- 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 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**)

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Request Parameters

Table 8-282 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	SetObjectMetadataRequest	Yes	**Explanation:** Request parameters for obtaining object metadata. For details, see Table 8-283.

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Table 8-283 SetObjectMetadataRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** Storage class of the object. **Value range**: See **Table 8-284**. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
removeUnset	boolean	No	**Explanation:** Whether to delete the previously configured metadata if the request is successful. **Value range**: **true**: If the API is successfully invoked, the previous metadata will be deleted. Standard metadata is not affected. For user-defined metadata, only the new metadata is retained. **false**: The previous metadata will not be deleted even if the API is successfully invoked. Standard metadata is not affected. For user-defined metadata, only the new metadata is retained. **Default value**: **false**

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Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, String>	No	**Explanation:** User-defined metadata of the object. To define it, you can add a header starting with **x-obs-meta-** in the request. In **Map**, the **String** 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. **Restrictions:** ● 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. ● 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. ● 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 and decoded in URL or Base64 on the client, because the server side does not perform any decoding. **Default value**: None
userHeaders	HashMap<String, String>	No	**Explanation:** User header list. In **HashMap**, the **String** key and value indicate the name and value of the user header field respectively. The SDK does not process the **userHeaders** and instead transparently transmits it to the server for later use. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** It specifies the metadata returned when the object is downloaded. For details, see **Table 8-285**.
webSiteRedirectLocation	String	No	**Explanation:** If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. To another object in the same bucket: **WebsiteRedirectLocation:/anotherPage.html** To an external URL: **WebsiteRedirectLocation:http://www.example.com/** OBS obtains the specified value from the header and stores it in the object metadata **WebsiteRedirectLocation**. **Restrictions:** • The value must start with a slash (/), **http://**, or **https://** and cannot exceed 2 KB. • OBS only supports redirection for objects in the root directory of a bucket. **Default value**: None

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Table 8-284 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Table 8-285 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

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Responses

Table 8-286 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentEncoding	String	No	**Explanation:** It specifies the content encoding format when an object is downloaded. **Default value**: None
contentDisposition	String	No	**Explanation:** 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. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
cacheControl	String	No	**Explanation:** It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None
contentMd5	String	No	**Explanation:** Base64-encoded MD5 value of the object data. It is provided for the OBS server to verify data integrity. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** Object storage class. If you do not specify this header, the object inherits the storage class of the bucket. **Value range**: See **Table 8-284**. **Default value**: None

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

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Parameter	Type	Mandatory (Yes/No)	Description
userMetadata	Map<String, Object>	No	**Explanation:** User-defined metadata of the object. To define it, you can add a header starting with **x-obs-meta-** in the request. In **Map**, the **String** key indicates the name of the user-defined metadata that starts with **x-obs-meta-**, and the **Object** value indicates the value of the user-defined metadata. **Default value**: None
statusCode	int	This parameter is automatically set in the response.	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	This parameter is automatically set in the response.	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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:

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```
PUT /[redacted]?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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            // 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();
        }
    }
}
```

8.5.2 Configuring Object Metadata During Object Upload (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).
- 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 8-287 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**PutObjectRequest**	Yes	**Explanation:** Request parameters for uploading an object. For details, see **Table 8-288**.

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Table 8-288 PutObjectRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket properties comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
metadata	ObjectMetadata	No	**Explanation:** Object metadata. For details, see Table 8-295. **Default value**: None
acl	AccessControlList	No	**Explanation:** ACL that can be pre-defined when an object is created. Refer to Table 8-296 to choose the option you need. **Value range**: • To use a pre-defined ACL, see Table 8-289 for the available options. • To use a user-defined ACL, see Table 8-296 to configure the required parameters. **Default value**: None
input	java.io.InputStream	No	**Explanation:** Data stream of the object to be uploaded. **Default value**: None
file	java.io.File	No	**Explanation:** File stream of the object to be uploaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
extensionPermissionMap	Map<**ExtensionObjectPermissionEnum**, Set<String>>	No	**Explanation:** A permission map for granting bucket ACL permissions to one or more accounts. **ExtensionObjectPermissionEnum** specifies the permissions to grant, and **Set<String>** describes the list of account IDs (indicated by **domain_id**) the granted permissions apply to. **Value range**: • For details about the available permissions, see **Table 8-293**. • To obtain the account ID, see **How Do I Get My Account ID and User ID?** **Default value**: None
expires	int	No	**Explanation:** 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. **Restrictions:** This parameter can be configured when uploading an object or using the **x-obs-expires** header in a metadata API call. **Value range**: An integer greater than 0, in days. **Default value**: None
progressListener	**ProgressListener**	No	**Explanation:** Upload progress. For details, see **Table 8-290**.

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Table 8-289 Pre-defined 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 abort 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.

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Constant	Description
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Table 8-290 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the upload progress. For details, see **Table 8-291**. **Default value**: None

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Table 8-291 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see Table 8-292. **Default value**: None

Table 8-292 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Table 8-293 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.

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

Constant	Default Value
AES256	AES256

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Table 8-294 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-295 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the file.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the file. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-294**. **Default value**: None

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

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

Table 8-296 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-297**.

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Parameter	Type	Mandatory (Yes/No)	Type
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-298**.

Table 8-297 Owner

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

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Table 8-298 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-300**. Grantee (user group) information. For details, see **Table 8-301**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-299**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

Table 8-299 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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Table 8-300 CanonicalGrantee

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

Table 8-301 GroupGrantee

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

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Responses

Table 8-302 PutObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits indicating the status of a response. It ranges from 2*xx* (indicating successes) to 4*xx* or 5*xx* (indicating errors). **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** 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. **Value range**: See **Table 8-294**. **Default value**: None
versionId	String	**Explanation:** Object version ID. If versioning is enabled for the bucket, the object version ID will be returned. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** 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 value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of the object, not its metadata. An uploaded object or copied object has a unique ETag. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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

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 region where the bucket is to be created.
```

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

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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.addUserMetadata("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.
```

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```
            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 sets the object storage class to Warm.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 Warm.
            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");
```

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```
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8.5.3 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).
- You can also call **metadata.getOriginalHeaders** to obtain information about all original response headers.

Method

obsClient.getObjectMetadata(**GetObjectMetadataRequest request**)

Request Parameters

Table 8-303 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**GetObjectMetadataRequest**	Yes	**Explanation:** Request parameters for obtaining object metadata. For details, see **Table 8-304**.

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Table 8-304 GetObjectMetadataRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path of the object that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
userHeaders	HashMap<String, String>	No	**Explanation:** User header list. In **HashMap**, the **String** key and value indicate the name and value of the user header field respectively. The SDK does not process the **userHeaders** and instead transparently transmits it to the server for later use. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
encodeHeaders	boolean	No	**Explanation:** Whether to enable OBS to automatically encode request headers. **Value range**: **true**: Encoding with SDK is enabled. **false**: Encoding with SDK is disabled. **Default value**: true

Constant	Default Value
AES256	AES256

Constant	Default Value
KMS	kms
AES256	AES256

Responses

Table 8-305 ObjectMetadata

Parameter	Type	Description
contentLength	Long	**Explanation:** Object size. The object size in a single upload ranges from 0 to 5 GB. To upload a file larger than 5 GB, use the multipart upload by referring to **Multipart Upload Overview (SDK for Java)**. If this parameter is not specified, the SDK automatically calculates the size of the object. **Value range:** None

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Parameter	Type	Description
contentType	String	**Explanation:** 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. If this parameter is not specified, the SDK determines the file type based on the object name suffix and assigns a value to the parameter. For example, if the object name suffix is **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)**
contentEncoding	String	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Value range:** None
contentDisposition	String	**Explanation:** 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. **Value range:** None
cacheControl	String	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Value range:** None
contentLanguage	String	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Value range:** None

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Parameter	Type	Description
expires	String	**Explanation:** The time a cached web page object expires. The time must be in the GMT format. **Value range:** None
contentMd5	String	**Explanation:** 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 **400** is returned. If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==**
lastModified	java.util.Date	**Explanation:** Last time the target part was modified. **Value range:** None
crc64	String	**Explanation:** The 64-bit CRC value calculated for the object based on the ECMA-182 standard. The CRC64 value is the unique identifier of the object content. It can be used to determine whether the object content is changed. If an object has different CRC64 values when being uploaded and downloaded, its content has been changed. CRC64 reflects changes to the content of the object, not its metadata. **Value range:** A 64-bit CRC value calculated based on the ECMA-182 standard

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Parameter	Type	Description
storageClass	StorageClassEnum	**Explanation:** 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. **Value range**: • If the storage class is Standard, leave this parameter blank. • See **Table 8-306**.
webSiteRedirectLocation	String	**Explanation:** If the bucket is configured with website hosting, the request for obtaining the object can be redirected to another object in the bucket or an external URL. This parameter specifies the address the request for the object is redirected to. To another object in the same bucket: **WebsiteRedirectLocation:/anotherPage.html** To an external URL: **WebsiteRedirectLocation:http://www.example.com/** **Value range:** None
nextPosition	long	**Explanation:** Start position for the next append upload. **Value range**: 0 to the object length, in bytes.
appendable	boolean	**Explanation:** Whether the object is appendable. **Value range**: **true**: The object is appendable. **false**: The object is not appendable.

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Parameter	Type	Description
userMetadata	Map<String, Object>	**Explanation:** User-defined metadata of the object. To define it, you can add a header starting with **x-obs-meta-** in the request. In **Map**, the **String** key indicates the name of the user-defined metadata that starts with **x-obs-meta-**, and the **Object** value indicates the value of the user-defined metadata. To obtain the user-defined metadata of an object, use **ObsClient.getObjectMetadata**. For details, see **Obtaining Object Metadata (SDK for Java)**. An object can have multiple pieces of metadata. The size of the metadata cannot exceed 8 KB in total. When you call **ObsClient.getObject** to download an object, its user-defined metadata will also be downloaded. **Value range:** None

Table 8-306 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

Sample Code

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
```

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

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

8.6 Versioning

8.6.1 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).
- Objects in the storage class can be downloaded only when they are restored.

Method

obsClient.getObject(**GetObjectRequest request**)

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Request Parameters

Table 8-307 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	GetObjectRequest	Yes	**Explanation:** Request parameters for downloading an object. For details, see **Table 8-308**.

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Table 8-308 GetObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. If version ID is left blank, the latest version of the object will be downloaded. **Value range**: The value must contain 32 characters. **Default value**: None
rangeStart	Long	No	**Explanation:** Start position for object download. **Value range**: A non-negative integer. **Default value**: None
rangeEnd	Long	No	**Explanation:** End position for object download. **Restrictions:** The upper limit of the value is the object length minus 1, in bytes. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
ifNoneMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
IfModifiedSince	Date	No	**Explanation:** The object is returned if it has been modified since the specified time; otherwise, an error is returned. **Default value**: None
IfUnmodifiedSince	Date	No	**Explanation:** The object is returned if it has not been modified since the specified time; otherwise, an error is returned. **Default value**: None
replaceMetadata	**ObjectRepleaceMetadata**	No	**Explanation:** Additional information about the object. For details, see **Table 8-309**.
progressListener	**ProgressListener**	No	**Explanation:** Data transmission listener for obtaining the download progress. For details, see **Table 8-310**.

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Table 8-309 ObjectRepleaceMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** **Expires** header in the response. It specifies the cache expiration time of the web page when the object is downloaded. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object in a download. **Default value**: None

Table 8-310 ProgressListener

Method	Return Value Type	Mandatory (Yes/No)	Description
progressChanged	void	Yes	**Explanation:** Used for obtaining the progress. For details, see **Table 8-311**. **Default value**: None

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Table 8-311 progressChanged

Parameter	Type	Mandatory (Yes/No)	Description
status	ProgressStatus	Yes	**Explanation:** Progress data. For details, see **Table 8-312**. **Default value**: None

Table 8-312 ProgressStatus

Method	Return Value Type	Description
getAverageSpeed()	double	Average upload speed, in byte/s.
getInstantaneous-Speed()	double	Instantaneous upload speed, in byte/s.
getTransferPercent-age()	int	Upload progress, in percentage.
getNewlyTransfer-redBytes()	long	Number of new bytes, in bytes.
getTransferredBytes( )	long	Number of bytes that have been transmitted, in bytes.
getTotalBytes()	long	Number of bytes to be transmitted, in bytes.

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

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Table 8-313 Owner

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

Table 8-314 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-315 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-314**. **Default value**: None

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

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

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Responses

Table 8-316 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-313**.

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Parameter	Type	Description
metadata	ObjectMetadata	**Explanation:** Object metadata. For details, see **Table 8-315**.
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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", "versionId");
            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.
```

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

8.6.2 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).
- 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 Cold storage class, you must restore it first.

Method

obsClient.copyObject(**CopyObjectRequest request**)

Request Parameters

Table 8-317 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**CopyObjectRequest**	Yes	**Explanation:** Request parameters for copying an object. For details, see **Table 8-318**.

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Table 8-318 CopyObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
acl	AccessControlList	No	**Explanation:** ACL that can be pre-defined during the object copy. For details, see **Table 8-319**. **Default value**: None
successRedirect-Location	String	No	**Explanation:** Address (URL) to which a successfully answered request is redirected. • If the value is valid and the request is successful, OBS returns status code **303**. **Location** contains **SuccessActionRedirect** as well as the bucket name, object name, and object ETag. • If the value is invalid, OBS ignores this parameter. In such case, the **Location** header is the object address, and OBS returns a status code based on whether the operation succeeds or fails. **Default value**: None

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

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Parameter	Type	Mandatory (Yes/No)	Description
sourceObjectKey	String	Yes	**Explanation:** 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. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
newObjectMetadata	**ObjectMetadata**	No	**Explanation:** User-defined metadata of the target object. For details, see **Table 8-325**. **Restrictions:** **newObjectMetadata** must be used together with **replaceMetadata**. **Default value**: None
replaceMetadata	boolean	No	**Explanation:** Whether to rewrite the metadata of the source object. **Restrictions:** **replaceMetadata** must be used together with **newObjectMetadata**. **Value range**: **true**: The metadata of the source object is rewritten. **false**: The metadata of the source object is not rewritten. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifModifiedSince	java.util.Date	No	**Explanation:** The source object is copied if it has been modified since the specified time; otherwise, an exception is thrown. **Default value**: None
ifUnmodifiedSince	java.util.Date	No	**Explanation:** If the source object has not been modified since the specified time, it is copied. Otherwise, an exception is thrown. **Default value**: None
ifMatchTag	String	No	**Explanation:** 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. **Restrictions:** ● If the object copy request includes **ifUnmodifiedSince**, **ifMatchTag**, **ifModifiedSince**, or **ifNoneMatchTag**, and the specified condition is not met, the copy will fail and an exception will be thrown with HTTP status code **412 precondition failed**. ● **ifModifiedSince** and **ifNoneMatchTag** can be used together. So do **ifUnmodifiedSince** and **ifMatchTag**. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
ifNoneMatchTag	String	No	**Explanation:** 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. **Value range**: The value must contain 32 characters. **Default value**: None
versionId	String	No	**Explanation:** Version ID of the source object. **Value range**: The value must contain 32 characters. **Default value**: None

Constant	Default Value
OBS_KMS	kms

Constant	Default Value
KMS	kms
AES256	AES256

Constant	Default Value
AES256	AES256

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Table 8-319 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-320**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-321**.

Table 8-320 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-321 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-323**. Grantee (user group) information. For details, see **Table 8-324**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-322**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 8-322 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

Table 8-323 CanonicalGrantee

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

Table 8-324 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Table 8-325 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-326**. **Default value**: None

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

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

Table 8-326 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Responses

Table 8-327 CopyObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
lastModified	java.util.Date	**Explanation:** Last time the target object was modified. **Default value**: None

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Parameter	Type	Description
etag	String	**Explanation:** ETag of the target object. Base64-encoded, 128-bit MD5 value of an object. ETag is the unique identifier of the object content and is used to determine whether the object content is changed. For example, if the ETag value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of an object, not its metadata. Objects created by the upload and copy operations have unique ETags. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None
versionId	String	**Explanation:** Version ID of the target object. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
copySourceVersionId	String	**Explanation:** Version ID of the source object. **Value range**: The value must contain 32 characters. **Default value**: None
storageClass	StorageClassEnum	**Explanation:** Storage class of the target object. **Value range**: See Table 8-326. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

8.6.3 Restoring a Specific Cold Object Version (SDK for Java)

Function

This API downloads a Cold object. To download such an object, you must restore it first. For the options for the restore speed, see **Table 8-330**.

You can call **ObsClient.restoreObject** to restore a Cold object version by specifying the **versionId**.

Restrictions

- To restore object, you must be the bucket owner or have the required permission (**obs:object:RestoreObject** in IAM or **RestoreObject** in a bucket policy.)
- The object specified in **ObsClient.restoreObject** must be in the Cold storage class. Otherwise, an exception will be thrown when you call this API.

Method

obsClient.restoreObject(**RestoreObjectRequest request**)

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Request Parameters

Table 8-328 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	RestoreObjectRequest	Yes	**Explanation:** Request parameters for restoring a Cold object version. For details, see **Table 8-329**.

Table 8-329 RestoreObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** **Value range**: The value must contain 32 characters. **Default value**: None. If this parameter is left blank, the latest version of the object is specified.
days	int	Yes	**Explanation:** 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. **Restrictions:** The value must be a positive integer. **Value range**: The value ranges from 1 to 30, in days. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
tier	RestoreTierEnum	No	**Explanation:** The restore option, which indicates the time spent on restoring the object. **Value range**: For details, see Table 8-330. **Default value**: Standard

Table 8-330 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 8-331 RestoreObjectStatus

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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

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.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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            System.out.println("RestoreObject failed");
            // Print other error information.
            e.printStackTrace();
        }
    }
}
```

8.6.4 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).
- 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 8-332 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**ListVersionsRequest**	Yes	**Explanation:** Request parameters for listing object versions in a bucket. For details, see **Table 8-333**.

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Table 8-333 ListVersionsRequest parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain periods (.) and hyphens (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
prefix	String	No	**Explanation:** Prefix that the names of objects to list must contain. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
keyMarker	String	No	**Explanation:** Object name to start with when listing object versions in a bucket. All object versions following this parameter are listed in alphabetical order. **Restrictions:** This parameter is only available for listing objects with multiple versions. **Value range**: The value of **nextKeyMarker** in the response body of the last request. **Default value**: None
maxKeys	int	No	**Explanation:** The maximum number of object versions returned in the response in alphabetical order. **Value range**: The value ranges from 1 to 1000. If the specified value is beyond this range, only 1,000 objects are returned. **Default value**: 1000

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Parameter	Type	Mandatory (Yes/No)	Description
delimiter	String	No	**Explanation:** 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 **CommonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **CommonPrefixes**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, objects **abcd** and **abcde** are grouped into a **commonPrefix** with **abcd** as the prefix. If only **delimiter** is set to **d**, objects **abcd** and **abcde** are grouped into a **commonPrefix** with **abcd** as the prefix, and **bbcde** is grouped separately into another **commonPrefix** with **bbcd** as the prefix. 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 **[delimiter=/]** to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionIdMarker	String	No	**Explanation:** 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 **keyMarker**. **keyMarker** specifies the object name, and **versionIdMarker** specifies the version of the specified object. **Restrictions:** ● This parameter is only available for listing objects with multiple versions. ● If the object version specified by **versionIdMarker** and the object name specified by **keyMarker** do not match, **versionIdMarker** is invalid. **Value range**: Object version ID, that is, the value of **nextVersionIdMarker** in the response body of the last request. **Default value**: None

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Responses

Table 8-334 ListVersionsResult

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

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Parameter	Type	Description
prefix	String	**Explanation:** Object name prefix. Assume that you have the following objects: **logs/day1**, **logs/day2**, **logs/day3**, and **ExampleObject.jpg**. If you specify **logs/** as the prefix, **logs/day1**, **logs/day2**, and **logs/day3** will be returned. If this parameter is left blank and there are no other filtering criteria, all objects in the bucket will be returned. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionIdMarker	String	**Explanation:** Object version for the object specified by **KeyMarker**. 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 **KeyMarker**. **KeyMarker** specifies the object name, and **versionIdMarker** specifies the version of the specified object. **Restrictions:** ● This parameter is only available for listing objects with multiple versions. ● If the object version specified by **versionIdMarker** and the object name specified by **keyMarker** do not match, **versionIdMarker** is invalid. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
nextVersionIdMarker	String	**Explanation:** Version ID to start with in the next request for listing object versions. It must be used together with **nextKeyMarker**. 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. **Restrictions:** This parameter is only available for listing objects with multiple versions. **Value range**: The value must contain 32 characters. **Default value**: None
objectSummaries	List<**ObsObject**>	**Explanation:** Object information. For details, see **Table 8-335**.
commonPrefixes	List<String>	**Explanation:** List of object name prefixes grouped according to the **delimiter** parameter (if specified) **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
truncated	boolean	**Explanation:** 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. **Value range**: **true**: Not all objects are returned. **false**: All objects are returned. **Default value**: None

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Parameter	Type	Description
keyMarker	String	**Explanation:** Object name to start listing from. All object versions following the value specified by this parameter are listed in alphabetical order by object name. **Restrictions:** This parameter is only available for listing objects with multiple versions. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
maxKeys	int	**Explanation:** Maximum number of objects to list. No more than the specified number of objects can be returned in the response in alphabetical order. **Value range**: The value ranges from 1 to 1,000. If the specified value is beyond this range, only 1,000 objects are returned. **Default value**: 1000

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Parameter	Type	Description
delimiter	String	**Explanation:** Object names are grouped by this parameter, which is often used with **Prefix**. If a prefix is specified, objects with the same string from the prefix to the first delimiter are grouped into one **CommonPrefixes**. If no prefix is specified, objects with the same string from the first character to the first delimiter are grouped into one **CommonPrefixes**. Assume that a bucket has objects **abcd**, **abcde**, and **bbcde** in it. If **delimiter** is set to **d** and **prefix** is set to **a**, files **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix. If only **delimiter** is set to **d**, files **abcd** and **abcde** are grouped into a **CommonPrefixes** with **abcd** as the prefix, and **bbcde** is grouped separately into another **CommonPrefixes** with **bbcd** as the prefix. For a 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 **[delimiter=/]** to list the contents in the current directory but exclude the contents in subdirectories, thereby accelerating the listing. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Description
nextKeyMarker	String	**Explanation:** 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. **Restrictions:** This parameter is only available for listing objects with multiple versions. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
location	String	**Explanation:** Region where a bucket is located.
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
versions	**VersionOrDeleteMarker**[]	**Explanation:** Object version information. For details, see **Table 8-340**.

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Table 8-335 ObsObject

Parameter	Type	Description
bucketName	String	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
owner	**Owner**	**Explanation:** Owner of the object. For details, see **Table 8-336**.
metadata	**ObjectMetadata**	**Explanation:** Object metadata. For details, see **Table 8-337**.

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Parameter	Type	Description
objectContent	InputStream	**Explanation:** Object data stream. **Default value**: None

Table 8-336 Owner

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

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Table 8-337 ObjectMetadata

Parameter	Type	Mandatory (Yes/No)	Description
contentLength	Long	No	**Explanation:** Object size. **Restrictions:** • 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. **Default value**: If this parameter is not specified, the SDK automatically calculates the size of the object.
contentType	String	No	**Explanation:** 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. **Value range**: See **What Is Content-Type (MIME)? (Java SDK)** **Default value**: 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 **.xml**, the object is an **application/xml** file. If the suffix is **.html**, the object is a **text/html** file.
contentEncoding	String	No	**Explanation:** **Content-Encoding** header in the response. It specifies which encoding is applied to the object. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentDisposition	String	No	**Explanation:** 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. **Default value**: None
cacheControl	String	No	**Explanation:** **Cache-Control** header in the response. It specifies the cache behavior of the web page when an object is downloaded. **Default value**: None
contentLanguage	String	No	**Explanation:** Language or language combination for visitors to customize and use. For details, see the definition of **ContentLanguage** in the HTTP protocol. **Default value**: None
expires	String	No	**Explanation:** The time a cached web page object expires. **Restrictions:** The time must be in the GMT format. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
contentMd5	String	No	**Explanation:** 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 **400** is returned. **Restrictions:** • The MD5 value of the file must be Base64 encoded. • If the MD5 value is not specified, the OBS server will not verify the MD5 value of the object. **Value range**: Base64-encoded 128-bit MD5 value of the request body calculated according to RFC 1864. Example: **n58IG6hfM7vqI4K0vnWpog==** **Default value**: None
storageClass	**StorageClassEnum**	No	**Explanation:** 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. **Value range**: See **Table 8-339**. **Default value**: None

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

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

Table 8-338 ObjectTypeEnum

Constant	Default Value	Description
NORMAL	NORMAL	Normal objects
APPENDABLE	APPENDABLE	Appendable objects

Table 8-339 StorageClassEnum

Constant	Default Value	Description
STANDARD	STANDARD	Standard storage class.
WARM	WARM	Warm storage class.
COLD	COLD	Cold storage class.

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Table 8-340 VersionOrDeleteMarker

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

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Parameter	Type	Description
key	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
isLatest	boolean	**Explanation:** Whether the object is the latest version. **Value range**: • **true**: The object is the latest version. • **false**: The object is not the latest version. **Default value**: **false**
lastModified	Date	**Explanation:** Time when the object was last modified. **Value range**: UTC time **Default value**: None

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Parameter	Type	Description
owner	Owner	**Explanation:** User information, including the domain ID and name of the object owner. For details, see Table 8-336.
etag	String	**Explanation:** Base64-encoded, 128-bit MD5 value of an object. ETag is the unique identifier of the object content and is used to determine whether the object content is changed. The ETag value is a hash of the object. For example, if the ETag value is **A** when an object is uploaded and **B** when the object is downloaded, the object content has changed. The ETag reflects changes only to the content of an object, not its metadata. Objects created by the upload and copy operations have unique ETags after being encrypted using MD5. **Restrictions:** If an object is encrypted using server-side encryption, the ETag is not the MD5 value of the object. **Value range**: The value must contain 32 characters. **Default value**: None

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Parameter	Type	Description
size	long	**Explanation:** Object size, in bytes. **Value range**: The value ranges from 0 TB to 48.8 TB, in bytes. **Default value**: None
storageClass	**StorageClassEnum**	**Explanation:** 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. **Value range**: See **Table 8-339**. **Default value**: None
objectType	**ObjectTypeEnum**	**Explanation:** Type of the object. **Value range:** Object type. For details, see **Table 8-338**. **Default value:** None
isDeleteMarker	boolean	**Explanation:** Whether the object version is a delete marker. **Value range**: **true** **false** **Default value**: None

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.

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
```

```
        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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 follow 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());
                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 all object versions in bucket **examplebucket** using pagination by setting **keyMarker**.

```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

```
        // Use a 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
```

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```
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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");
                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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
```

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```
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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();
        }
    }
    // 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);
        }
    }
}
```

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());
```

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```
                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.

8.6.5 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).
- An object ACL supports a maximum of 100 grants.

Method

obsClient.setObjectAcl(**SetObjectAclRequest request**)

Request Parameters

Table 8-341 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**SetObjectAclRequest**	Yes	**Explanation:** Request parameters for setting an object ACL. For details, see **Table 8-342**.

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Table 8-342 SetObjectAclRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
acl	**AccessControlList**	No	**Explanation:** An ACL specified for the object. You can use either a pre-defined or a user-defined ACL. **Value range**: • To use a pre-defined ACL, see **Table 8-349** for the available options. • To use a user-defined ACL, see **Table 8-343** to configure the required parameters. **Default value**: AccessControlList.REST_CANNED_PRIVATE

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Table 8-343 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Type
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-344**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-345**.

Table 8-344 Owner

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

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Parameter	Type	Mandatory (Yes/No)	Description
displayName	String	No	**Explanation:** Account name of the owner. **Value range**: To obtain the account name, see **How Do I Get My Account ID and User ID?** **Default value**: None

Table 8-345 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-346**. Grantee (user group) information. For details, see **Table 8-347**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-348**. **Default value**: None
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**

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Table 8-346 CanonicalGrantee

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

Table 8-347 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 8-348 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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** permissions for the object.

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Table 8-349 Pre-defined 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 abort 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.
AccessControlList.REST_CANNED_PUBLIC_READ_WRITE_DELIVERED	Public read/write 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 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. This permission cannot be granted on objects.

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Constant	Description
AccessControlList.REST_CANNED_BUCKET_OWNER_FULL_CONTROL	If this permission is granted on an object, only the bucket and object owners have the full control over the object. By default, if you upload an object to a bucket owned by another user, the bucket owner does not have the permissions on your object. After you grant this permission to the bucket owner, the bucket owner can have full control over your object. For example, if user A uploads object **x** to user B's bucket, user B does not have control over object **x**. If user A sets **bucket-owner-full-control** for object **x**, user B then has control over object **x**.

Responses

Table 8-350 Common response headers

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** HTTP response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None

Code Examples

This example sets an ACL for the versioned object **objectname** in bucket **examplebucket**.

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Define the ACL of the versioned object to Private.
            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 the ACL for the versioned object.
            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.

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8.6.6 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 is used to obtain the ACL of a specific object version.

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).
- To call this API, you must have the read permission on the ACL of the object.

Method

obsClient.getObjectAcl(**GetObjectAclRequest request**)

Request Parameters

Table 8-351 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**GetObjectAclRequest**	Yes	**Explanation:** Request parameters for obtaining the ACL of the object. For details, see **Table 8-352**.

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Table 8-352 GetObjectAclRequest parameters

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** ● A bucket name must be unique across all accounts and regions. ● A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. ● If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	Yes	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None

Responses

Table 8-353 AccessControlList

Parameter	Type	Mandatory (Yes/No)	Description
owner	**Owner**	No	**Explanation:** Bucket owner information. For details, see **Table 8-354**.
delivered	boolean	No	**Explanation:** Whether the bucket ACL is applied to all objects in the bucket. **Value range**: **true**: The bucket ACL is applied to all objects in the bucket. **false**: The bucket ACL is not applied to any objects in the bucket. **Default value**: **false**
grants	Set<**GrantAndPermission**>	No	**Explanation:** Grantee information. For details, see **Table 8-355**.

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Table 8-354 Owner

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

Table 8-355 GrantAndPermission

Parameter	Type	Mandatory (Yes/No)	Description
grantee	**CanonicalGrantee** or **GroupGrantee**	Yes	**Explanation:** Grantees (users or user groups). **Value range:** Grantee (user) information. For details, see **Table 8-356**. Grantee (user group) information. For details, see **Table 8-9**.
permission	**Permission**	Yes	**Explanation:** Permissions to grant. **Value range**: See **Table 8-358**. **Default value**: None

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

Table 8-356 CanonicalGrantee

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

Table 8-357 GroupGrantee

Constant	Description
ALL_USERS	All users.
AUTHENTICATED_USERS	Authorized users. This constant is deprecated.

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Constant	Description
LOG_DELIVERY	Log delivery group. This constant is deprecated.

Table 8-358 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.
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.

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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 **READ**, **WRITE**, **READ_ACP**, and **WRITE_ACP** permissions for the bucket. A grantee with this permission for an object has **READ**, **READ_ACP**, and **WRITE_ACP** 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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Obtain the ACL of the versioned object.
            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());
```

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

8.6.7 Deleting an Object Version (SDK for Java)

Function

This API is used to delete a specified object version in a bucket to save space and costs.

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).
- If versioning is not enabled for a bucket, deleted objects cannot be recovered.

Method

obsClient.deleteObject(**DeleteObjectRequest request**)

Request Parameters

Table 8-359 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**DeleteObjectRequest**	Yes	**Explanation:** Request parameters for deleting an object. For details, see **Table 8-360**.

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Table 8-360 DeleteObjectRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None

Responses

Table 8-361 DeleteObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None

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Parameter	Type	Description
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
versionId	String	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
deleteMarker	boolean	**Explanation:** Whether the deleted object is a delete marker. **Value range**: • **true**: The deleted object is a delete marker. • **false**: The deleted object is not a delete marker. **Default value**: **false**
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

8.6.8 Batch Deleting Object Versions (SDK for Java)

Function

This API is used to delete multiple specified object versions from a bucket to save space and costs.

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 in a batch.

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).

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- 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 the cyclic deletion of multiple objects, there may be data inconsistency (the index data of an object is deleted but the metadata still exists).

Method

obsClient.deleteObjects(**DeleteObjectsRequest deleteRequest**)

Request Parameters

Table 8-362 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
deleteRequest	**DeleteObjectsRequest**	Yes	**Explanation:** Request parameters for deleting objects in batches. For details, see **Table 8-363**.

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Table 8-363 DeleteObjectsRequest

Parameter	Type	Mandatory (Yes/No)	Description
bucketName	String	Yes	**Explanation:** Bucket name. **Restrictions:** • A bucket name must be unique across all accounts and regions. • A bucket name: – Must be 3 to 63 characters long and start with a digit or letter. Lowercase letters, digits, hyphens (-), and periods (.) are allowed. – Cannot be formatted as an IP address. – Cannot start or end with a hyphen (-) or period (.). – Cannot contain two consecutive periods (..), for example, **my..bucket**. – Cannot contain a period (.) and a hyphen (-) adjacent to each other, for example, **my-.bucket** or **my.-bucket**. • If you repeatedly create buckets of the same name in the same region, no error will be reported and the bucket attributes comply with those set in the first creation request. **Default value**: None
keyAndVersions	List<**KeyAndVersion**>	Yes	**Explanation:** List of objects to be deleted. For details, see **Table 8-364**.

Parameter	Type	Mandatory (Yes/No)	Description
quiet	boolean	No	**Explanation:** Response mode to the request for deleting objects in a batch. **Value range**: • **false**: The detailed mode. Results of both successful and failed deletions are returned. • **true**: The quiet mode. Only results of failed deletions are returned. **Default value**: **false**

Table 8-364 KeyAndVersion

Parameter	Type	Mandatory (Yes/No)	Description
key	String	Yes	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
versionId	String	No	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None. If this parameter is left blank, the latest version of the object is deleted.

Responses

Table 8-365 DeleteObjectsResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
deletedObjectResults	List<**DeleteObjectResult**>	**Explanation:** Response results of the request for deleting objects in a batch. For details, see **Table 8-366**.
errorResults	List<**ErrorResult**>	**Explanation:** List of objects that fail to be deleted. For details, see **Table 8-367**.

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Table 8-366 DeleteObjectResult

Parameter	Type	Description
statusCode	int	**Explanation:** HTTP status code. **Value range**: A status code is a group of digits that can be **2***xx* (indicating successes) or **4***xx* or **5***xx* (indicating errors). It indicates the status of a response. **Default value**: None
responseHeaders	Map<String, Object>	**Explanation:** Response header list, composed of tuples. In a tuple, the **String** key indicates the name of the header, and the **Object** value indicates the value of the header. **Default value**: None
versionId	String	**Explanation:** Object version ID. **Value range**: The value must contain 32 characters. **Default value**: None
deleteMarker	boolean	**Explanation:** Whether the deleted object is a delete marker. **Value range**: • **true**: The deleted object is a delete marker. • **false**: The deleted object is not a delete marker. **Default value**: **false**

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Parameter	Type	Description
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None

Table 8-367 ErrorResult

Parameter	Type	Description
versionId	String	**Explanation:** Object version ID.
errorCode	String	**Explanation:** Error code for the failed deletion.
objectKey	String	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
message	String	**Explanation:** Error message for the failed deletion.

Code Examples

This example passes multiple version IDs (**versionId**) to batch delete object versions using **ObsClient.deleteObjects**.

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```
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 region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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9 Temporarily Authorized Access (SDK for Java)

9.1 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. This URL can be shared with other users for 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.
2. If the signatures do not match, check whether signature parameters are correct. 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.

Operations That Can Be Performed Using a Signed URL

The following table lists operations that can be performed through a signed URL.

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Table 9-1 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
Configure Bucket ACL	HttpMethodEnum.PUT	SpecialParamEnum.ACL	Yes	No
Obtain Bucket ACL	HttpMethodEnum.GET	SpecialParamEnum.ACL	Yes	No

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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

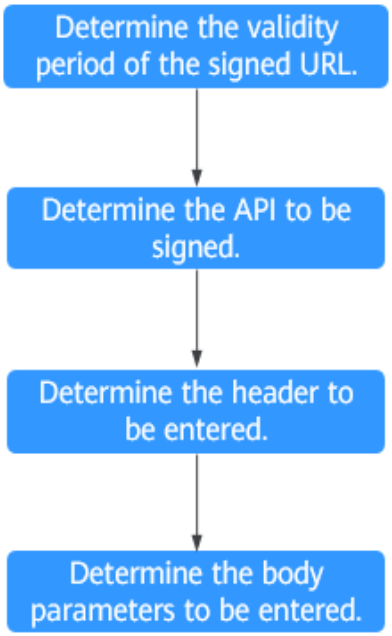
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Operation	HTTP Request Method (Value in OBS SDK for Java)	Special Operator (Value in OBS SDK for Java)	Bucket Name Required (Yes/No)	Object Name Required (Yes/No)
Upload Object	HttpMethodEnum.PUT	N/A	Yes	Yes
Append Object	HttpMethodEnum.POST	SpecialParamEnum.APPEND	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
Configure Object ACL	HttpMethodEnum.PUT	SpecialParamEnum.ACL	Yes	Yes
Obtain 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
Assemble Parts	HttpMethodEnum.POST	N/A	Yes	Yes
Delete Multipart Upload	HttpMethodEnum.DELETE	N/A	Yes	Yes
Restore Cold Objects	HttpMethodEnum.POST	SpecialParamEnum.RESTORE	Yes	Yes

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Process

To access OBS using a signed URL generated by the OBS SDK for Java, perform the following steps:



Procedure	Code Example
Check the validity period of the signed URL.	Set the **expires** parameter to determine the validity period of the URL.

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Procedure	Code Example

Determine the API that you want to access using the signed URL. For details about APIs that support signed URLs, see **APIs that support URLs**. After determining the API, you can determine the **HttpMethodEnum** and **SpecialParamEnum** parameters. For example, if you want to set the object ACL using the signed URL, set **HttpMethodEnum** to **HttpMethodEnum.PUT** and **SpecialParamEnum** to **SpecialParamEnum.ACL**.	The following code sets the ACL of exampleobject in the bucket **examplebucket**:
	`TemporarySignatureRequest request = new TemporarySignatureRequest(HttpMethodEnum.PUT, expireSeconds);`
	`request.setBucketName("examplebucket");`
	`request.setObjectKey("exampleobject");`
	`request.setSpecialParam(SpecialParamEnum.ACL);`
	For details about the complete code, see **Code Example: Setting an Object ACL Using a Signed URL**.

Confirm the body that needs to be included when you call the API.	The following code sets the ACL of **exampleobject** in the bucket **examplebucket**. The body contains the ACL configuration information.
	`Request httpRequest = builder.url(response.getSignedUrl())`
	`.put(RequestBody.create(null, ("<AccessControlPolicy>"`
	`+ "<Owner><ID>"`
	`+ OwnerId`
	`+ "</ID></Owner>"`
	`+ "<Delivered>true</Delivered>"`
	`+ "<AccessControlList>"`
	`+ "<Grant>"`
	`+ "<Grantee><ID>"`
	`+ OwnerId`
	`+ "</ID></Grantee>"`
	`+ "<Permission>FULL_CONTROL</Permission>"`
	`+ "</Grant>"`
	`+ "</AccessControlList>"`
	`+ "</AccessControlPolicy>").getBytes()))`
	`.build();`
	For details about the complete code, see **Code Example: Setting an Object ACL Using a Signed URL**.

Method

obsClient.createTemporarySignature(**TemporarySignatureRequest request**)

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NOTE

The **ObsClient.createTemporarySignature** function has encoded the generated URL. The browser will automatically decode the URL. You do not need to encode it again.

Request Parameters

Table 9-2 List of request parameters

Parameter	Type	Mandatory (Yes/No)	Description
request	**TemporarySignatureRequest**	Yes	**Explanation:** Request parameters for creating a signed URL. For details, see **Table 9-3**.

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Table 9-3 TemporarySignatureRequest

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

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Parameter	Type	Mandatory (Yes/No)	Description
objectKey	String	No	**Explanation:** Object name. An object is uniquely identified by an object name in a bucket. An object name is a complete path that does not contain the bucket name. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
specialParam	**SpecialParamEnum**	No	**Explanation:** Special parameters that may be used in the request, indicating the sub-operations. **Value range**: See **Table 9-1**. **Default value**: None
method	**HttpMethodEnum**	Yes	**Explanation:** HTTP method type. **Value range**: See **Table 9-1**. **Default value**: None
headers	Map<String, String>	No	**Explanation:** Headers in the request. In **Map**, the **String** key and value indicate the name and value of the request header respectively. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
queryParams	Map<String, Object>	No	**Explanation:** Query parameters in the request. In **Map**, the **String** key indicates the name of the query parameter, and the **Object** value indicates the value of the query parameter. **Default value**: None
expires	long	Yes	**Explanation:** Expiration time of the signed URL. **Value range**: • If you use a temporary key to call the SDK API, the value of **expires** ranges from 0 to 86400 seconds (24 hours). • If you use a permanent key to call the SDK API, the value of **expires** ranges from 0 to 630720000 seconds (20 years). **Default value**: 300
requestDate	Date	Yes	**Explanation:** Time when the request is initiated. **Default value**: None

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Responses

Table 9-4 TemporarySignatureResponse

Parameter	Type	Description
signedUrl	String	**Explanation:** The signed URL that carries the authentication information. **Default value**: None
actualSignedRequestHeaders	Map<String, String>	**Explanation:** Actual headers in the request initiated using the signed URL. In **Map**, the **String** key and value indicate the name and value of the request header respectively. **Default value**: None

Sample Code Overview

The following provides code examples for the following scenarios:

Table 9-5 Sample code for accessing OBS using a temporary URL

Scenario		Example
Basic operations	Creating a bucket	**Code Example: Creating a Bucket**
	Uploading an object	**Code Example: Uploading an Object**
		Sample Code: Performing an Append Upload
	Downloading an object	**Code Example: Downloading an Object**
		Sample Code: Downloading an Object Version
	Listing objects	**Code Example: Listing Objects**

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Scenario		Example
	Deleting an object	**Code Example: Deleting an Object**
	Performing a multipart upload	**Code Example: Initiating a Multipart Upload**
		Code Example: Uploading a Part
		Code Example: Listing Uploaded Parts
		Code Example: Assembling Parts
Advanced operations	Obtaining the download link of image processing	#obs_21_0901/section112801918071
	Server-side encryption: downloading an object encrypted using SSE-C	#obs_21_0901/section195111828105617
	Verifying data consistency during object upload	**Sample Code: Verifying Data Consistency During Object Upload**
	Configuring an object ACL	**Code Example: Setting an Object ACL Using a Signed URL**
	Custom domain names	**Sample Code: Generating a Signed URL in the Custom Domain Name Scenario**

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");
```

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```
        // (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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is to be created.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            // 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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();
        }
    }
}
```

Sample Code: Performing an Append Upload

This example uses **HttpMethodEnum.POST** to append data to object **objectname** 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.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.HashMap;
import java.util.Map;

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 not
advised to use hard coding, which may result in information leakage.
```

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```
        // Obtain an AK/SK pair and a security token using environment variables or import them in other ways. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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.APPEND);
            Map<String, Object> queryParams = new HashMap<String, Object>();
            // Set the position where the data is to be appended.
            queryParams.put("position","0");
            request.setQueryParams(queryParams);
            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 POST request to upload an object.
            Request httpRequest =
                builder.url(response.getSignedUrl())
                    .post(RequestBody.create("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");
            }
            // Obtain the position for the next append.
            if (res.header("x-obs-next-append-position") != null) {
                System.out.println("next-position:" +res.header("x-obs-next-append-position") + "\n");
            }
            res.close();
            System.out.println("AppendObject successfully");
        } 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();
```

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```
        } catch (Exception e) {
            System.out.println("AppendObject 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

Sample Code: Downloading an Object Version

This example uses **HttpMethodEnum.GET** to download object **objectname** from bucket **examplebucket** based on a signed URL. The version ID is **G001118BC7F0603B0000401201878AFF**. 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.HashMap;
import java.util.Map;

public class GetObjectWithVersion001 {
    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 not
advised 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
```

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```
ways. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the
following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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<>();
            // Specify the version ID of the object.
            queryParams.put("versionId","G001118BC7F0603B0000401201878AFF");
            request.setQueryParams(queryParams);
            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();
            }
            if(objectContent != null) {
                // objectContent is the file stream to download.
                // Read the objectContent stream here. 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
            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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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("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();
    }
  }
}
```

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.
```

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```
        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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
    }
}
```

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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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", "1");
            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.GET** 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
```

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

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```
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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

NOTE

- **HttpMethodEnum** is an enumeration function defined in OBS SDK for Java, whose value indicates the request method types.

Sample Code: Verifying Data Consistency During Object Upload

This example uses content-md5 for integrity check when using a temporary URL to upload an object to OBS.

```
import com.obs.services.ObsClient;
import com.obs.services.internal.utils.ServiceUtils;
import com.obs.services.model.*;
import okhttp3.*;
import java.io.ByteArrayOutputStream;
import java.io.File;
import java.io.FileInputStream;
import java.io.IOException;
import java.security.NoSuchAlgorithmException;
import java.util.HashMap;
import java.util.Map;
public class Create_TemporarySignature_Uploadobject {
    public static void main(String[] args) throws IOException, NoSuchAlgorithmException {
// 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
```

```
        // 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 a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        // Set the validity period of the URL to 3600 seconds.
        long expireSeconds = 3600L;
        Map<String, String> headers = new HashMap<String, String>();
        String localFile_path = "localFile_path";
        //Convert the local file into a stream and calculate its MD5 value.
        try (FileInputStream fileInputStream = new FileInputStream(localFile_path)) {
            String md5 = ServiceUtils.toBase64(ServiceUtils.computeMD5Hash(fileInputStream));
            headers.put("content-md5",md5);
        }
        TemporarySignatureRequest request = new  TemporarySignatureRequest(HttpMethodEnum.PUT,
expireSeconds);
        request.setBucketName("your_bucketname");
        request.setObjectKey("objectkey");
        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 the file.
        Request httpRequest = builder.url(response.getSignedUrl())
                .put(RequestBody.create(getBytesByFile(localFile_path))).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();
    }
    public static byte[] getBytesByFile(String pathStr) {
        File file = new File(pathStr);
        try (FileInputStream fis = new FileInputStream(file);
             ByteArrayOutputStream bos = new ByteArrayOutputStream(1000)) {
            byte[] b = new byte[1000];
            int n;
            while ((n = fis.read(b)) != -1) {
                bos.write(b, 0, n);
            }
            return bos.toByteArray();
        } catch (Exception e) {
            e.printStackTrace();
        }
        return null;
    }
}
```

Code Example: Setting an Object ACL Using a Signed URL

The following code sets the ACL of **exampleobject** in the bucket **examplebucket** to **bucket-owner-full-control**.

```
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;
```

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```
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 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a 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("exampleobject");
            request.setSpecialParam(SpecialParamEnum.ACL);

            TemporarySignatureResponse response = obsClient.createTemporarySignature(request);

            System.out.println("Set object ACL 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.
            // Replace OwnerId with the actual owner ID.
            String OwnerId = "5b690************abc";
            Request httpRequest = builder.url(response.getSignedUrl())
                .put(RequestBody.create(null, ("<AccessControlPolicy>"
                    + "<Owner><ID>"
                    + OwnerId
                    + "</ID></Owner>"
                    + "<Delivered>true</Delivered>"
                    + "<AccessControlList>"
                    + "<Grant>"
                    + "<Grantee><ID>"
                    + OwnerId
                    + "</ID></Grantee>"
                    + "<Permission>FULL_CONTROL</Permission>"
                    + "</Grant>"
                    + "</AccessControlList>"
                    + "</AccessControlPolicy>").getBytes()))
                .build();
            OkHttpClient httpClient = new OkHttpClient.Builder().followRedirects(false)
```

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```
                .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("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();
        }
    }
}
```

Sample Code: Generating a Signed URL in the Custom Domain Name Scenario

CAUTION

A custom domain name refers to a domain name bound to an OBS bucket, not any domain name.

This example uses **HttpMethodEnum.GET** to download object **objectname** from bucket **examplebucket** based on a signed URL and a custom domain name. The validity period of the URL is 3,600 seconds.

```
import com.obs.services.ObsClient;
import com.obs.services.ObsConfiguration;
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 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 not
```

```
advised 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. If you use a temporary AK/SK pair and a security token to make an API call, uncomment the
following line.
        // String securityToken = System.getenv("SECURITY_TOKEN");
        // Specify the custom domain name that has been configured on the console.
        String endPoint = "http://your-domain";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
        ObsConfiguration config = new ObsConfiguration();
        config.setEndPoint(endPoint);
        // Set a custom domain name for accessing OBS.
        config.setCname(true);
        // Whether to allow only HTTPS requests.
        config.setHttpsOnly(false);
        // Create an ObsClient instance.
        ObsClient obsClient = new ObsClient(ak, sk, config);
        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();
            }
            if(objectContent != null) {
                // objectContent is the file stream to download.
                // Read the objectContent stream here. 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();
        }
    }
}
```

10 Adding User-defined Headers to a Request

Function

When using the Java SDK to call an API, you can add user-defined headers to a request to include headers that are not integrated into the current SDK. The SDK automatically calculates the signature based on the provided headers if needed.

The usage is as follows:

1. Initialize the request object of the corresponding API.
2. Call the **addUserHeaders()** method of the request object to add user-defined headers.
3. Add other required parameters.
4. Call the corresponding SDK API and pass the request object.

Sample Code (Creating a Bucket in a Specified Cluster)

Create a bucket in a specified cluster using a custom header.

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

import java.util.HashMap;
import java.util.Map;
public class UserHeaders001{
    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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");
```

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```
        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        CreateBucketRequest request = new CreateBucketRequest();
        request.setBucketName("examplebucket");
        // Add parameters for creating a bucket to a custom header.
        HashMap<String, String> userHeaders = new HashMap<>();
        // Create an encrypted bucket. Supported values: obs and kms.
        userHeaders.put("x-obs-location-clustergroup-id","lz01");
        request.setUserHeaders(userHeaders);
        // Set the bucket location (for example, CN North-Beijing4).
        request.setLocation("cn-north-4");
        try{
            // The bucket is created.
            ObsBucket bucket = obsClient.createBucket(request);
            System.out.println(bucket.getStatusCode());
        }
        catch (ObsException e)
        {
            System.out.println("HTTP Code: " + e.getResponseCode());
            System.out.println("Error Code:" + e.getErrorCode());
            System.out.println("Error Message: " + e.getErrorMessage());
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            Map<String, String> headers = e.getResponseHeaders();// Check Map entries and print all headers
associated with the error.
            if(headers != null){
                for (Map.Entry<String, String> header : headers.entrySet()) {
                    System.out.println(header.getKey()+":"+header.getValue());
                }
            }
            e.printStackTrace();
        }
    }
}
```

Sample Code (Creating a Bucket with Server-Side Encryption)

Use a custom header to specify server-side encryption when creating a bucket.

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

import java.util.HashMap;
import java.util.Map;
public class UserHeaders002 {
    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 not
advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        CreateBucketRequest request = new CreateBucketRequest();
        request.setBucketName("examplebucket");
        // Add parameters for creating a bucket to the custom header.
        HashMap<String, String> userHeaders = new HashMap<>();
        // Create an encrypted bucket. Supported values: obs and kms.
        userHeaders.put("x-obs-server-side-encryption","kms");
        request.setUserHeaders(userHeaders);
        // Set the bucket location (for example, CN North-Beijing4).
        request.setLocation("cn-north-4");
        try{
            // Create a bucket.
            ObsBucket bucket = obsClient.createBucket(request);
            System.out.println(bucket.getStatusCode());
        }
        catch (ObsException e)
        {
            System.out.println("HTTP Code: " + e.getResponseCode());
            System.out.println("Error Code:" + e.getErrorCode());
            System.out.println("Error Message: " + e.getErrorMessage());
            System.out.println("Request ID:" + e.getErrorRequestId());
            System.out.println("Host ID:" + e.getErrorHostId());
            Map<String, String> headers = e.getResponseHeaders();// Check Map entries and print all headers
associated with the error.
            if(headers != null){
                for (Map.Entry<String, String> header : headers.entrySet()) {
                    System.out.println(header.getKey()+":"+header.getValue());
                }
            }
            e.printStackTrace();
        }
    }
}
```

Sample Code (Specifying the referer Header)

This example uploads **localfile** to **examplebucket** as **objectkey** and sets the **referer** header to **https://example.com***.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import com.obs.services.model.PutObjectResult;
import java.io.File;
import java.util.HashMap;
public class UserHeaders003 {
    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 not
advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
```

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```
            // Upload a file.
            // 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"));
            HashMap<String, String> userHeaders = new HashMap<>();
            // Specify the referer header when uploading an object.
            userHeaders.put("referer","https://example.com*");
            request.setUserHeaders(userHeaders);
            PutObjectResult putObjectResult = 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();
        }
    }
}
```

Sample Code (Configuring Single-Connection Bandwidth Throttling During Upload)

This example limits the upload rate by specifying the **x-obs-traffic-limit** header. The SDK transparently transmits the header for the server to verify.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import com.obs.services.model.PutObjectResult;
import java.io.File;
import java.util.HashMap;
public class UserHeaders004 {
    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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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```
        try {
            // Upload a file.
            // 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"));
            HashMap<String, String> userHeaders = new HashMap<>();
            // Specify x-obs-traffic-limit as the rate limit, in bit/s. 819200 (100 KB/s) is used in this example.
            userHeaders.put("x-obs-traffic-limit","819200");
            request.setUserHeaders(userHeaders);
            PutObjectResult putObjectResult = 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();
        }
    }
}
```

Sample Code (Configuring Single-Connection Bandwidth Throttling During Download)

This example limits the download rate by specifying the **x-obs-traffic-limit** header. The SDK transparently transmits the header for the server to verify.

```
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.ByteArrayOutputStream;
import java.io.InputStream;
import java.util.HashMap;
public class UserHeaders005 {
    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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

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

        try {
            // Download an object.
            GetObjectRequest request = new GetObjectRequest("examplebucket", "objectname");
            HashMap<String, String> userHeaders = new HashMap<>();
            //Specify x-obs-traffic-limit as the rate limit, in bit/s. 819200 (100 KB/s) is used in this example.
            userHeaders.put("x-obs-traffic-limit","819200");
            request.setUserHeaders(userHeaders);
            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();
        }
    }
}
```

11 Data Types

11.1 InventoryConfiguration

Table 11-1 InventoryConfiguration

Parameter	Type	Mandatory (Yes/No)	Description
configurationId	String	Yes	**Explanation:** ID of a bucket inventory rule. **Restrictions:** The rule ID allows letters (a–z, A–Z), digits (0–9), hyphens (-), underscores (_), and periods (.). **Value range**: The value can be up to 64 characters long. **Default value**: None
isEnabled	boolean	Yes	**Explanation:** Whether the bucket inventory rule is enabled. **Value range**: **true**: The rule is enabled, and inventory files are generated. **false**: The rule is disabled. No inventory file is generated. **Default value**: true

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Parameter	Type	Mandatory (Yes/No)	Description
objectPrefix	String	No	**Explanation:** Prefix for filtering objects. Only objects with the specified name prefix are included in inventory files. **Value range**: The value must contain 1 to 1,024 characters. **Default value**: None
frequency	String	Yes	**Explanation:** Intervals when inventories are generated. You can set this parameter to **Daily** or **Weekly**. An inventory is generated within one hour from when it is configured for the first time. Then it is generated at the specified intervals. **Value range**: **Daily**: Inventories are generated once a day. **Weekly**: Inventories are generated once a week. **Default value**: None
inventoryFormat	String	Yes	**Explanation:** Inventory file format. Only the CSV format is supported. **Value range**: CSV **Default value**: None

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

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Parameter	Type	Mandatory (Yes/No)	Description
includedObjectVersions	String	Yes	**Explanation:** Whether versions of objects are included in an inventory. **Value range**: • If this parameter is set to **All**, all the versions of objects are included in the inventory, and version-related fields are added to the inventory, including: **VersionId**, **IsLatest**, and **DeleteMarker**. • If this parameter is set to **Current**, the inventory only lists information about the current object version and does not include any version-related fields. **Default value**: None
optionalFields	ArrayList<String>	No	**Explanation:** Additional object metadata fields that are contained in an inventory file. **Value range**: **Size**: Object size. **LastModifiedDate**: The last time when the object was modified. **StorageClass**: The storage class of the object. **ETag**: The ETag value of the object. **IsMultipartUploaded**: Whether the object was uploaded in a **multipart upload**. **ReplicationStatus**: The cross-region replication status of the object. **EncryptionStatus**: The encryption status of the object. **BucketKeyStatus**: The bucket key status. **UserMeta**: The user-defined metadata. **CRC64**: The object's CRC64 value. **ObjectType**: The object type. **Default value**: None

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Parameter	Type	Mandatory (Yes/No)	Description
filter	Table 11-2	No	**Explanation:** Filter criteria for generating bucket inventories. You can filter objects by object name prefix, whether the object is of the latest version, and whether the object is a delete marker. Multiple filter criteria can be combined using the And operator. **Restrictions:** The **filter** and **objectPrefix** parameters are mutually exclusive. If **filter** is set, it takes precedence. If **filter** is not set, **objectPrefix** is used. **Value range:** For details, see Table 11-2. **Default value:** None

Table 11-2 InventoryFilter

Parameter	Type	Mandatory (Yes/No)	Description
prefix	String	No	**Explanation:** Object name prefix used to filter objects. Only objects with the specified name prefix are included in inventory files. **Value range:** The value must contain 1 to 1,024 characters. **Default value:** Empty string, indicating that objects are not filtered by name prefix.

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12 Fault Locating (SDK for Java)

12.1 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 is used. You can submit a service ticket to obtain the latest version of OBS Java SDK and download it.

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.
    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);
}
```

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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 **SDK error code** from **ObsException** or the 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 cannot be obtained, collect the stack information of **ObsException** and contact the OBS client O&M team to locate the cause.

----End

12.2 Resolving Dependency Missing or Conflicts (SDK for Java)

Dependency missing and dependency conflict are commonly encountered in Java development. When using the **common SDK for Java**, if the error message "ClassNotFoundException" or "NoClassDefFoundError" is reported during application compilation and running, check whether this is a problem related to dependencies. If yes, perform the following steps to locate and rectify the fault.

Background Knowledge

The SDK for Java comes in two versions: bundle and standard. The comparison between the two versions is as follows:

Dimension	Standard	Bundle
Application scenario	The standard version is small in size and suitable for space-sensitive scenarios.	This version is applicable to space-insensitive scenarios where dependency conflicts are difficult to resolve.
Source code	The source code of the bundle version is the same as that of the standard version.	
Space used	Small. It contains only the SDK code and does not have built-in third-party dependencies.	Large. In the bundle version, all third-party dependencies are packaged and redirected to the package, without depending on external third-party packages. This prevents problems caused by dependency conflicts.

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Dimension	Standard	Bundle
Maven configuration		

Solution

Dependency Missing

The following table lists the third-party components (including their versions) that the latest SDK depends on.

Dependency	Version	Description
okhttp	4.12.0	Used to send HTTP requests.
okio	3.8.0	Component of OkHttp
jackson-core	2.15.4	Used to construct and parse JSON files.
jackson-databind	2.15.4	Component of jackson-core
jackson-annotations	2.15.4	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 conflicting ones with the versions required by the SDK.

12.3 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.

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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
```

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```
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: Submit a service ticket to obtain the latest version of Java SDK and download it.
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.

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NullPointException

```
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: Submit a service ticket to obtain the latest version of Java SDK and download it.

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 stream 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.

Problem in SDK Version Upgrade

The third-party dependency of the SDK of an earlier version (2.1.*x*) is not completely compatible with that of the new SDK (3.*x*). If a program startup error occurs after the earlier version is upgraded to the new version, refer to **Resolving Dependency Missing or Conflicts (SDK for Java)** to rectify the fault. If the fault persists, contact the OBS O&M team.

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 an earlier version of OkHttp 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.

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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**.

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13 Troubleshooting (SDK for Java)

13.1 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 are required to complete the request. 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

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HTTP Status Code	Description	Possible Cause
400 Bad Request	The request parameter is incorrect.	• Invalid request parameter. • The consistency check fails after the client request carries MD5. • An invalid parameter is transferred when the SDK is used. • An invalid bucket name is used.
403 Forbidden	The access is denied.	• 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. • The account does not have the permission to access the requested resource. • The account is in arrears. • The bucket space is insufficient when a quota is set for the bucket. • Invalid AK • 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).
404 Not Found	The requested resource does not exist.	• The bucket does not exist. • The object does not exist. • The bucket policy configuration does not exist. For example, the bucket CORS configuration or bucket policy configuration does not exist. • The multipart upload does not exist.
405 Method Not Allowed	The request method is not supported.	The request method or feature is not supported in the region where the bucket is located.

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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.	• Buckets of the same name are created in different regions. • The bucket to delete is not empty.
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.

13.2 SDK Error Codes (SDK for Java)

SDK error codes are exceptions thrown by ObsClient. They are inherited from class **java.lang.RuntimeException**. Exceptions are usually OBS server errors, including OBS error codes and error information. This helps users locate and troubleshoot faults.

SDK error codes includes the following:

- OBS API error codes. For details, see the error code section in the *API Reference*.
- SDK custom exceptions. For details, see **Table 13-1**.

Table 13-1 SDK custom exceptions

Exception	Exception Description
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
ObsException.printStackTrace()	Prints the detailed stack trace of an exception.

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13.3 SDK Common Response Headers (SDK for Java)

After you successfully call an API in an instance of ObsClient, an instance of the HeaderResponse class (or of its sub-class) will be returned.

It contains information about HTTP/HTTPS response headers.

Sample code for processing public response headers:

```
// 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.
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();
```

13.4 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 log 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.

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File Name	Description
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 client.

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|setObjectAcl||||2017-08-21 17:40:06|2017-08-21 17:40:07|||0|
2017-08-21 17:40:07 137|main|INFO |ObsClient [setObjectAcl] cost 312 ms
```

Log Levels

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 the 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.

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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>
```

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14 FAQs (SDK for Java)

14.1 How Can I Set an Object to Be Accessible to Anonymous Users? (Java SDK)

To do this, perform the following steps:

Step 1 Set the ACL to public read 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

14.2 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 5*XX* 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 re-read. 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.

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14.3 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*

14.4 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:

```
// 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.
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 directory levels.

14.5 How to Improve the Speed of Uploading Large Files over the Public Network? (Java SDK)

If a file exceeds 100 MB, you are advised to upload the file using multipart upload.

Multipart upload refers to splitting an object into multiple parts and uploading them separately. Each part is a contiguous portion of the object's 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)**.

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14.6 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 Initialize an instance of ObsClient based on the AK, SK, and endpoint.

Step 2 Specify the bucket name and object name to initialize **InitiateMultipartUploadRequest**. Call **InitiateMultipartUploadRequest.setMetadata** to specify the metadata of the object to be uploaded. Then, call **ObsClient.initiateMultipartUpload** to initiate a multipart upload task. A globally unique identifier (upload ID) for this task will be returned.

Step 3 Specify the bucket name and object name to initialize **UploadPartRequest**. Call **UploadPartRequest.setUploadId** to specify the upload ID to which the part to be uploaded corresponds. Call **setPartNumber** to specify the part number of the part. Call **setFile** to specify the large file to which the part belongs. Call **setPartSize** to specify the part size. 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 assemble parts.

----End

For details, see **Multipart Upload (SDK for Java)**.

14.7 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 - Range-Based (SDK for Java)**.

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14.8 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)**.

14.9 Does the SDK Support Uploading, Downloading, or Copying Objects in a Batch? (SDK for Java)

The SDK does not provide dedicated APIs for uploading, downloading, or copying objects in a batch. However, you can combine existing APIs to implement this function. The procedure is as follows:

Step 1 List all objects to be uploaded, downloaded, or copied. For details, see **Listing Objects (SDK for Java)**.

Step 2 Call the API for uploading, downloading, or copying a single object for the listed objects.

----End

The sample code for uploading objects in a batch is as follows:

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import java.io.ByteArrayInputStream;
import java.io.File;
import java.util.ArrayList;
import java.util.List;
import java.util.concurrent.CountDownLatch;
import java.util.concurrent.ExecutorService;
import java.util.concurrent.Executors;
import java.util.concurrent.TimeUnit;
import java.util.concurrent.atomic.AtomicInteger;

public class BatchUpload001 {
    private List<File> fileList = new ArrayList<>();
    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 not advised 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");
```

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```
        // Enter the endpoint corresponding to the region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

        // Create an ObsClient instance.
        // Use a permanent AK/SK pair to initialize the client.
        ObsClient obsClient = new ObsClient(ak, sk, endPoint);
        // Use a temporary AK/SK pair and security token to initialize the client.
        // ObsClient obsClient = new ObsClient(ak, sk, securityToken, endPoint);
        try {
            String bucketName = "examplebucket";
            // Define the prefix of objects in the bucket.
            String objectPre = "object/";
            // Folder to be uploaded
            String localDirPath = "localfile";

            // Scan all files and empty directories in the folder.
            File localDir = new File(localDirPath);
            if (!localDir.exists() || !localDir.isDirectory()) {
                System.out.println("The local folder does not exist: " + localDirPath);
                return;
            }

            BatchUpload001 uploader = new BatchUpload001();
            uploader.listFiles(localDir);

            if (uploader.fileList.isEmpty()) {
                System.out.println("The file to be uploaded is not found.");
                return;
            }

            System.out.println("Number of objects to be uploaded: " + uploader.fileList.size());

            // Initialize the thread pool.
            int threadCount = 20;
            ExecutorService executorService = Executors.newFixedThreadPool(threadCount);
            CountDownLatch latch = new CountDownLatch(uploader.fileList.size());
            AtomicInteger successCount = new AtomicInteger(0);
            AtomicInteger failCount = new AtomicInteger(0);

            // Concurrently upload files.
            for (File f : uploader.fileList) {
                executorService.execute(() -> {
                    try {
                        String relativePath = f.getPath().substring(localDirPath.length() + 1);
                        // Replace the Windows path separator with the separator of the OBS object key.
                        String remoteObjectKey = objectPre + relativePath.replace("\\", "/");

                        if (f.isDirectory()) {
                            // For empty folders, create empty folder objects in the bucket.
                            remoteObjectKey += "/";
                            obsClient.putObject(bucketName, remoteObjectKey, new ByteArrayInputStream(new
byte[0]));
                        } else {
                            obsClient.putObject(bucketName, remoteObjectKey, f);
                        }
                        successCount.incrementAndGet();
                        System.out.println("Upload succeeded: " + remoteObjectKey);
                    } catch (ObsException e) {
                        failCount.incrementAndGet();
                        System.out.println("Upload failed: " + f.getPath());
                                + ", HTTP Code: " + e.getResponseCode()
                                + ", Error Code: " + e.getErrorCode()
                                + ", Error Message: " + e.getErrorMessage());
                    } catch (Exception e) {
                        failCount.incrementAndGet();
                        System.out.println("Upload failed: " + f.getPath() + ", " + e.getMessage());
                    } finally {
```

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```
                    latch.countDown();
                }
            });
        }

        // Wait until the upload is complete.
        executorService.shutdown();
        latch.await(30, TimeUnit.MINUTES);

        System.out.println("Upload completed. Successful: " + successCount.get() + ", Failed: " +
failCount.get());
    } catch (ObsException e) {
        System.out.println("Failed to create ObsClient.");
        System.out.println("HTTP Code: " + e.getResponseCode());
        System.out.println("Error Code: " + e.getErrorCode());
        System.out.println("Error Message: " + e.getErrorMessage());
    } catch (Exception e) {
        System.out.println("Upload exception: " + e.getMessage());
        e.printStackTrace();
    }
  }

  // Recursively scan all files and empty directories in the folder.
  private void listFiles(File file) {
    File[] children = file.listFiles();
    if (children == null) {
        return;
    }
    if (children.length == 0) {
        // An empty folder also needs to be uploaded. Add it to the list.
        fileList.add(file);
        return;
    }
    for (File f : children) {
        if (f.isDirectory()) {
            listFiles(f);
        } else if (f.isFile()) {
            fileList.add(f);
        }
    }
  }
}
```

NOTE

You can use multiple threads to concurrently upload, download, and copy data to improve efficiency.

14.10 What Is Content-Type (MIME)? (Java SDK)

Multipurpose Internet Mail Extensions (MIME) type is a standard way of describing the media type of data included in a request or response and is used by the browser to decide how to display data. 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.

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Content-Type

Content-Type indicates the type of data to send or receive and determines 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.

File Name Extension	Content-Type	File Name Extension	Content-Type
.* (binary stream, unknown file type)	application/octet-stream	.7z	application/x-7z-compressed
.001	application/x-001	.301	application/x-301
.323	text/h323	.906	application/x-906
.907	drawing/907	.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
.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	image/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/*

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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
.cut	application/x-cut	.dbf	application/x-dbf
.dbm	application/x-dbm	.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	.dot	application/msword
.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	.hgl	application/x-hgl

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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	image/x-icon
.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
.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
.man	application/x-troff-man	.math	text/xml

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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/javascript	.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	.p7b	application/x-pkcs7-certificates
.p7c	application/pkcs7-mime	.p7m	application/pkcs7-mime

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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	.pdf	application/pdf
.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
.ppa	application/vnd.ms-powerpoint	.ppm	application/x-ppm
.pps	application/vnd.ms-powerpoint	.ppt	application/vnd.ms-powerpoint
.ppt	application/x-ppt	.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-realtext3d
.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

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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
.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-realtext
.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	.sit	application/x-stuffit
.slb	application/x-slb	.sld	application/x-sld
.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

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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	text/xml
.swf	application/x-shockwave-flash	.tdf	application/x-tdf
.tg4	application/x-tg4	.tga	application/x-tga
.tif	image/tiff	.tiff	image/tiff
.ttf	font/otf	.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-vsd	.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

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File Name Extension	Content-Type	File Name Extension	Content-Type
.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	.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
.xdp	application/vnd.adobe.xdp	.xdr	text/xml
.xfd	application/vnd.adobe.xfd	.xfdf	application/vnd.adobe.xfdf
.xhtml	text/html	.xlsx	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet
.xls	application/x-xls	.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_b	application/x-x_b

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File Name Extension	Content-Type	File Name Extension	Content-Type
.sis	application/vnd.symbian.install	.sisx	application/vnd.symbian.install
.x_t	application/x-x_t	.ipa	application/vnd.iphone
.apk	application/vnd.android.package-archive	.xap	application/x-silverlight-app
.zip	application/zip	.rar	application/x-rar-compressed
.wasm	application/wasm	-	-

14.11 How Do I Get My Account ID and User ID?

Obtaining the Account ID and User ID

When calling APIs, you may need to specify the account ID (**DomainID**) and user ID (**UserID**) in some requests. You need to obtain them from the console in advance. To obtain them from the console, do as follows:

Step 1 Log in to the management console.

Step 2 Hover the mouse pointer over the username and choose **My Credentials** from the drop-down list.

On the **My Credentials** page, view the account ID and user ID.

----End

14.12 How Do I Limit the Rate During Object Upload? (SDK for Java)

This example limits the upload rate by specifying the **x-obs-traffic-limit** header. The SDK transparently transmits the header for the server to verify.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import com.obs.services.model.PutObjectResult;
import java.io.File;
import java.util.HashMap;
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");
```

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```
        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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Upload a file.
            // 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"));
            HashMap<String, String> userHeaders = new HashMap<>();
            // Specify x-obs-traffic-limit as the rate limit, in bit/s. 819200 (100 KB/s) is used in this example.
            userHeaders.put("x-obs-traffic-limit","819200");
            request.setUserHeaders(userHeaders);
            PutObjectResult putObjectResult = 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();
        }
    }
}
```

14.13 How Do I Limit the Rate During Object Download? (SDK for Java)

This example limits the download rate by specifying the **x-obs-traffic-limit** header. The SDK transparently transmits the header for the server to verify.

```
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.ByteArrayOutputStream;
import java.io.InputStream;
import java.util.HashMap;
public class UserHeaders005 {
    public static void main(String[] args) {
```

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```
        // 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 not advised 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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Download an object.
            GetObjectRequest request = new GetObjectRequest("examplebucket", "objectname");
            HashMap<String, String> userHeaders = new HashMap<>();
            //Specify x-obs-traffic-limit as the rate limit, in bit/s. 819200 (100 KB/s) is used in this example.
            userHeaders.put("x-obs-traffic-limit","819200");
            request.setUserHeaders(userHeaders);
            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();
        }
    }
}
```

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14.14 How Do I Configure the Referer Header? (SDK for Java)

This example uploads **localfile** to **examplebucket** as **objectkey** and sets the **Referer** header to **https://example.com***.

```
import com.obs.services.ObsClient;
import com.obs.services.exception.ObsException;
import com.obs.services.model.PutObjectRequest;
import com.obs.services.model.PutObjectResult;
import java.io.File;
import java.util.HashMap;
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 region where the bucket is located.
        String endPoint = "https://your-endpoint";
        // Obtain an endpoint using environment variables or import it in other ways.
        //String endPoint = System.getenv("ENDPOINT");

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

        try {
            // Upload a file.
            // 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"));
            HashMap<String, String> userHeaders = new HashMap<>();
            // Specify the Referer header when uploading an object.
            userHeaders.put("Referer","https://example.com*");
            request.setUserHeaders(userHeaders);
            PutObjectResult putObjectResult = 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();
```

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```
    }
  }
}
```