Alibaba Cloud
Object Storage Service

Product Introduction

Issue: 20190627

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	Danger: Resetting will result in the loss of user configuration data.
	This warning information indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	Warning: Restarting will cause business interruption. About 10 minutes are required to restore business.
	This indicates warning informatio n, supplementary instructions, and other content that the user must understand.	Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus , page names, and other UI elements.	Click OK.
`Courier font`	It is used for commands.	Run the `cd / d C :/ windows` command to enter the Windows system folder.
Italics	It is used for parameters and variables.	`bae log list -- instanceid` *Instance_ID*
[] or [a|b]	It indicates that it is a optional value, and only one item can be selected.	`ipconfig` *[-all|-t]*

Style	Description	Example
{} or {a|b}	It indicates that it is a required value, and only one item can be selected.	`swich` *{stand | slave}*

Contents

1 What is OSS?

Alibaba Cloud Object Storage Service (OSS) is a storage service that enables you to store, back up, and archive any amount of data in the cloud. OSS is a cost-effective, highly secure, and highly reliable cloud storage solution. It uses RESTful APIs and is designed for 99.999999999% (11 nines) durability and 99.99% availability. Using OSS, you can store and retrieve any type of data at any time, from anywhere on the web.

You can use API and SDK interfaces provided by Alibaba Cloud or OSS migration tools to transfer massive amounts of data into or out of Alibaba Cloud OSS. You can use the Standard storage class of OSS to store image, audio, and video files for apps and large websites. You can use the Infrequent Access (IA) or Archive storage class as a low-cost solution for backup and archiving of infrequently accessed data.

Concepts

- Storage Class

  OSS provides three storage classes: Standard, Infrequent Access, and Archive. These storage classes cover various data storage scenarios from hot data to cold data. For more information, see *Introduction to storage classes*.

- Bucket

  A bucket is a container for objects stored in OSS. Every object is contained in a bucket. The data model structure of Alibaba Cloud OSS is flat instead of hierarchic al.

- Objects

  Objects, also known as files, are the fundamental entities stored in OSS. An object is composed of metadata, data, and key. The key is the unique object name in a bucket. Metadata defines the attributes of an object, such as the time last modified and the object size. You can also specify custom metadata of an object.

- Region

  A region represents the physical location of an OSS data center. You can choose the region where OSS will store the buckets you create. You may choose a region that has the least latency, lowest costs, or that meets certain regulatory requirements. Generally, the closer the user is in proximity to a region, the faster the access speed is. For more information, see *OSS regions and endpoints*.

- Endpoint

  An endpoint is the domain name used to access the OSS. OSS provides external services through HTTP RESTful APIs. Different regions use different endpoints. For the same region, access through an intranet or through the Internet also uses different endpoints. For more information, see *OSS regions and endpoints*.

- AccessKey

  An AccessKey (AK) is composed of an AccessKeyId and an AccessKeySecret. They work in pairs to perform access identity verification. OSS verifies the identity of a request sender by using the AccessKeyId/AccessKeySecret symmetric encryption method. The AccessKeyId is used to identify a user. The AccessKeySecret is used for the user to encrypt the signature and for OSS to verify the signature. The AccessKeySecret must be kept confidential.

Related services

After you load your data to OSS, you can use it with other Alibaba Cloud products and services.

The following services are frequently used with OSS:

- Elastic Compute Service (ECS)

  An online computing service that offers elastic and secure virtual cloud servers to cater for all your cloud hosting needs. See the *ECS product details page*.

- Alibaba Cloud CDN

  A scalable and high-performance content delivery service for accelerated distribution of content to users across the globe. See the *CDN product details page*.

- E-MapReduce

  A Big Data service that uses Apache Hadoop and Spark to process and analyze data. See the *E-MapReduce product details page.*

- ApsaraVideo for Media Processing

  A cloud service for transcoding multimedia data into various output resolutions, bit rates, and formats for unhindered playback. See the *ApsaraVideo for Media Processing product details page*.

Use OSS

Alibaba Cloud provides an intuitive operation interface for you to manage your OSS resources. You can log on to the OSS console to operate your buckets and objects. For more information, see the *OSS Console User Guide*.

You can also use APIs and SDKs to manage your OSS resources. For more information, see *OSS API Reference* and *OSS SDK Reference*.

OSS pricing

Traditional storage providers require you to purchase a predetermined amount of storage and network transfer capacity. If you exceed the capacity, your service is shut off or you are charged excess fees. If you do not use the full capacity, you still pay as though you have used it all.

OSS charges you only for what you actually use, without excess fees. As your business grows, you can enjoy the cost advantages of the flexible infrastructure from Alibaba Cloud, which adapts to meet your ever-changing requirements.

For more information about OSS pricing, see the *OSS Pricing page*.

Learning path

Visit the *OSS Learning Path* for the knowledge you need to become an OSS expert!

Video

You can view the following video to quickly get familiar with OSS:

2 Benefits

Alibaba Cloud Object Storage Service (OSS) is a storage service that enables you to store, back up, and archive any amount of data in the cloud. OSS is a cost-effective, highly secure, and highly reliable cloud storage solution. This topic compares OSS with the traditional storage to help you better understand Alibaba Cloud OSS.

Benefits of OSS over traditional storage

Item	OSS	Traditional storage
Reliability	· Guarantees 99.99% designed service availability. · Offers automatic scaling without affecting external services. · Guarantees 99.999999999% (11 nines) designed durability. · Offers automatic redundant data backup.	· Depends on hardware reliability. Traditional storage has a relatively high failure rate. If a disk has bad sectors, data may be lost and cannot be recovered. · Manual data recovery is complex and involves a lot of time and technical resources.
Security	· Provides enterprise-grade, multilevel security. · Supports multi-user resource isolation and remote disaster recovery. · Provides authentication and authorization, as well as whitelist, anti-leeching, and RAM account features.	· Traffic cleaning service and black hole service must be purchased separately. · Security must be implemented independently.

Item	OSS	Traditional storage
Cost	· BGP backbone network without bandwidth restrictions. Upstream traffic is free of charge. · No maintenance staff or hosting fees required.	· Storage space is limited by hardware capacity . Manual scaling is required. · Access speeds are slow during single or double -line access. Bandwidth restrictions are imposed . Manual scaling is required during peak traffic periods. · Requires professional maintenance staff and high costs.
Data Processing Capabilities	Provides image processing , audio/video transcoding, accelerated content delivery, archive services, and other value-added data services.	Must be purchased and deployed separately.

More benefits of OSS

- Easy to use
  - Provides RESTful APIs, a wide range of SDKs, client tools, and a web console. You can easily upload, download, retrieve, and manage massive amounts of data for websites and applications in the same way as for regular files in Windows.
  - Sets no limit on the number and size of files. Unlike the traditional hardware storage, OSS enables you to easily scale up (expand) your storage space as needed.
  - Supports streaming upload and download, which is suitable for business scenarios where you need to simultaneously read and write videos and other large files.
  - Offers lifecycle management. You can delete expired data in batches or transition the data to low-cost archive services.

- Powerful and flexible security
  - Provides flexible authentication and authorization, including STS, URL, whitelist, anti-leeching, and RAM account features.
  - Offers user-level resource isolation. You can also use the multi-cluster synchronization service.
- Data redundancy mechanism

  OSS uses a data redundancy storage mechanism to store redundant data of each object on multiple devices of different facilities in the same area, ensuring data reliability and availability in case of hardware failure.

  - Object operations in OSS are strongly consistent. For example, once a user receives an upload or copy success response, the object can be read immediately , and the redundant data has already been written to multiple devices.
  - To ensure complete data transmission, OSS checks whether an error occurs when packets are transmitted between the client and the server by calculating the checksum of the network traffic packets.
  - The redundant storage mechanism of OSS can avoid data loss if two storage facilities are damaged at the same time.
    - After data is stored in OSS, OSS checks whether redundant data is lost. If yes, OSS recovers the lost redundant data to ensure data reliability and availability .
    - OSS periodically checks the integrity of data through verification to discover data damage caused by factors such as hardware failure. If data is partially damaged or lost, OSS reconstructs and repairs the damaged data by using redundant data.

- Rich and powerful value-added services
  - Image processing: Supports format conversion, thumbnails, cropping, watermarks, scaling, and other operations with a wide variety of file formats including jpg, png, bmp, gif, webp, and tiff.
  - Audio/video transcoding: Provides high-quality, high-speed, parallel audio/video transcoding capabilities for audio/video files stored in OSS. You can easily make your audio/video files compatible for different types of devices.
  - Accelerated content delivery: Content Delivery Network (CDN) can be used with OSS to speed up the delivery of content stored in OSS. This service features high stability, unlimited origin bandwidth, and easy configuration.

3 Basic concepts

Before you use OSS, we recommend that you have a basic understanding of the following concepts.

Bucket

A bucket is a container for objects stored in OSS. Every object is contained in a bucket . The data model structure of Alibaba Cloud OSS is flat instead of hierarchical.

- All objects (files) are directly related to their corresponding buckets. Therefore, OSS lacks the hierarchical structure of directories and subfolders as in a file system .
- A user can have multiple buckets.
- A bucket name must be globally unique within OSS and cannot be changed once a bucket is created.
- A bucket can contain an unlimited number of objects.

The naming conventions for buckets are as follows:

- The bucket names must contain only lower case letters, numbers, and hyphens (-).
- The bucket names must start and end with a lower-case letter or number.
- The bucket names must be at least 3 bytes and no more than 63 bytes in length.

Object

Objects, also known as files, are the fundamental entities stored in OSS. An object is composed of metadata, data, and key. The key is the unique object name in a bucket . Metadata defines the attributes of an object, such as the time last modified and the object size. You can also specify custom metadata of an object.

The lifecycle of an object starts when it is uploaded, and ends when it is deleted. During the lifecycle, the object content cannot be changed. If you want to modify an object, you must upload a new object with the same name as the existing one to replace it. Therefore, unlike the file system, OSS does not allow users to modify objects directly.

OSS provides the Append Upload function, which allows you to continually append data to the end of an object.

The naming conventions for objects are as follows:

- The object names must use UTF-8 encoding.
- The object names must be at least 1 byte and no more than 1023 bytes.
- The object names cannot start with a backslash (\ ) or a forward slash (/).

> Note:
> Object names are case sensitive. Unless otherwise stated, objects and files mentioned in OSS documents are collectively called objects.

Region

A region represents the physical location of an OSS data center. You can choose the region where OSS will store the buckets you create. You may choose a region to optimize latency, minimize costs, or address regulatory requirements. Generally, the closer the user is in proximity to a region, the faster the access speed is. For more information, see *OSS regions and endpoints*.

Regions are configured at bucket level instead of object level. Therefore, all objects contained in a bucket are stored in the same region. A region is specified when a bucket is created, and cannot be changed once it is created.

Endpoint

An endpoint is the domain name used to access the OSS. OSS provides external services through HTTP RESTful APIs. Different regions use different endpoints. For the same region, access through an intranet or through the Internet also uses different endpoints. For example, regarding the Hangzhou region, its Internet endpoint is oss-cn-hangzhou.aliyuncs.com, and its intranet endpoint is oss-cn-hangzhou-internal.aliyuncs.com. For more information, see *OSS regions and endpoints*.

AccessKey

An AccessKey (AK) is composed of an AccessKeyId and an AccessKeySecret. They work in pairs to perform access identity verification. OSS verifies the identity of a request sender by using the AccessKeyId/AccessKeySecret symmetric encryption method. The AccessKeyId is used to identify a user. The AccessKeySecret is used for the user to encrypt the signature and for OSS to verify the signature. The AccessKeyS ecret must be kept confidential. In OSS, AccessKeys are generated by the following three methods:

- The bucket owner applies for AccessKeys.

- The bucket owner uses RAM to authorize a third party to apply for AccessKeys.
- The bucket owner uses STS to authorize a third party to apply for AccessKeys.

For more information about AccessKeys, see *Access control*.

Strong consistency

In OSS, object operations are atomic, which means operations are either successful or failed without an intermediate state. OSS will never write corrupted or partial data.

Object operations in OSS are strongly consistent. For example, once a user receives an upload (PUT) success response, the object can be read immediately, and the data has already been written in triplicate. Therefore, OSS provides strong consistency for read-after-write. The same is true for the delete operations. Once a user deletes an object, the object becomes nonexistent immediately.

Data redundancy mechanism

OSS uses a data redundancy storage mechanism to store redundant data of each object on multiple devices of different facilities in the same area, ensuring data reliability and availability in case of hardware failure.

- Object operations in OSS are strongly consistent. For example, once a user receives an upload or copy success response, the object can be read immediately, and the redundant data has already been written to multiple devices.
- To ensure complete data transmission, OSS checks whether an error occurs when packets are transmitted between the client and the server by calculating the checksum of the network traffic packets.
- The redundant storage mechanism of OSS can avoid data loss if two storage facilities are damaged at the same time.
  - After data is stored in OSS, OSS checks whether redundant data is lost. If yes, OSS recovers the lost redundant data to ensure data reliability and availability.
  - OSS periodically checks the integrity of data through verification to discover data damage caused by factors such as hardware failure. If data is partially damaged or lost, OSS reconstructs and repairs the damaged data by using redundant data.

Comparison between OSS and file systems

Comparison item	OSS	File system
Data model	OSS is a distributed object storage service that uses a key-value pair format.	The file system is a hierarchical tree structure of directories that contain files.
Data retrieval	Objects are retrieved based on unique object names (keys). Although users can use names like test1/test.jpg , this does not indicate that the object test.jpg is saved in a directory named test1. For OSS, test1 /test.jpg and a.jpg have no essential difference . Similar amounts of resources are consumed during access to objects of different names.	Files are retrieved based on their locations in directories.
Advantage	OSS supports massive concurrent accesses , which means large volumes of unstructur ed data (such as images, videos, and documents) can be stored and retrieved without excessive use of resources.	Folder operations such as renaming, moving, and deleting directories are quite easy, because data does not need to be copied and replaced.

Comparison item	OSS	File system
Disadvantage	The stored objects cannot be modified directly. If you want to modify an object, you must upload the new object of the same name to replace the existing one.	System performance depends on the capacity of a single device. The more files and directories that are created in the file system, the more resources are consumed, and the lengthier the user process becomes.

As a result, mapping OSS to a file system is not a recommended practice. When you use OSS, we recommend that you make full use of its advantages, including its massive data processing capabilities to store massive volumes of unstructured data, such as images, videos, and documents.

The mapping between OSS concepts and file system concepts is as follows:

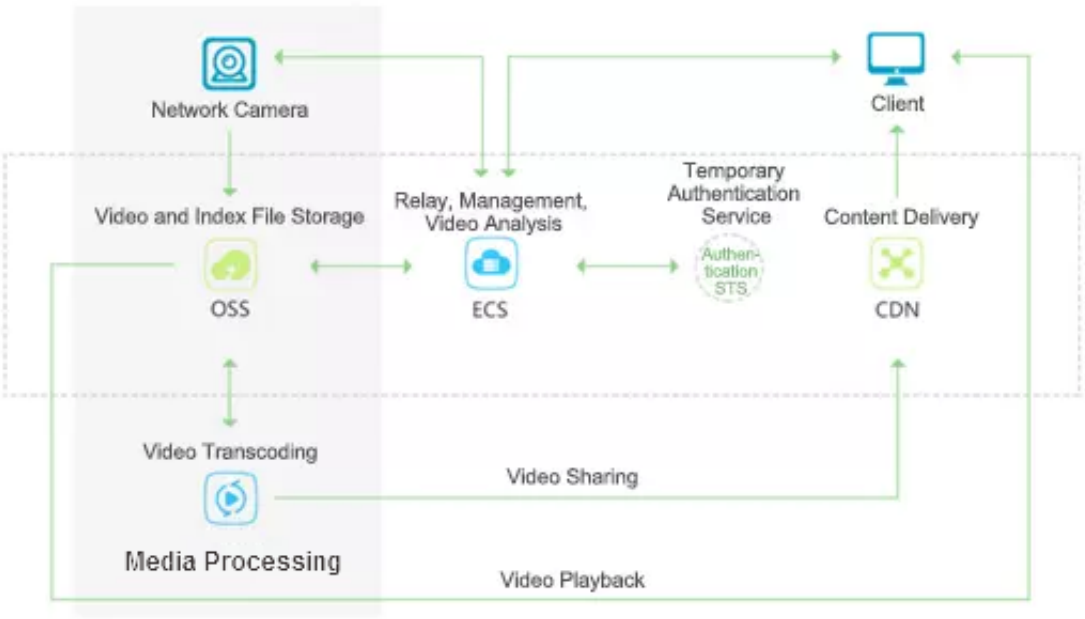
OSS	File system
Object	File
Bucket	Home directory
Region	NA
Endpoint	NA
AccessKey	NA
NA	Multilevel directory
GetService	Retrieving the list of home directories
GetBucket	Retrieving the list of files
PutObject	Writing a file
AppendObject	Appending data to an existing file
GetObject	Reading a file
DeleteObject	Deleting an object
NA	Modifying file content
CopyObject (same target and source)	Modifying file attributes
CopyObject	Copying a file
NA	Renaming a file

4 Scenarios

OSS can make an impact in the following scenarios:

Massive-scale storage for image and audio/video applications

OSS can be used to store massive-scale data, such as images, audios, videos, and logs . It supports various devices and direct data read/write to and from OSS by websites and apps. OSS supports file and streaming uploads.

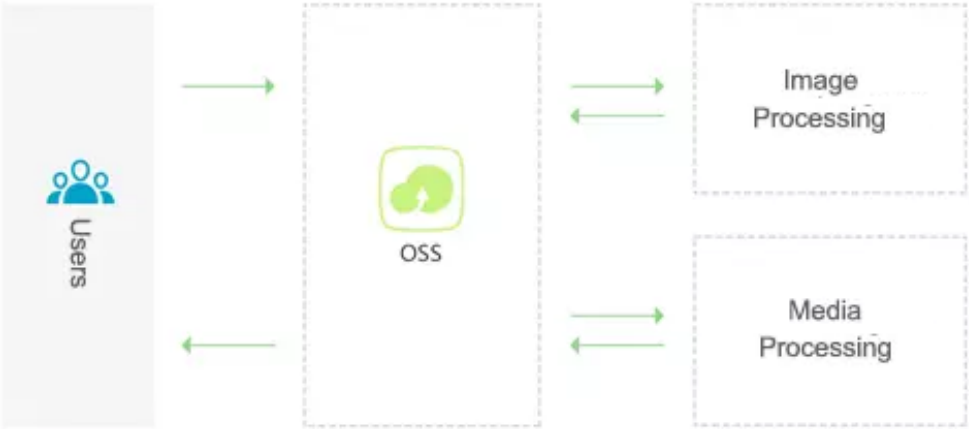


Static/dynamic resource separation for web pages and apps

OSS uses the BGP bandwidth to achieve ultra-low latency of direct data download. In addition, OSS can be used with Alibaba Cloud CDN to speed up the delivery of images , audios, videos, and app files. This enhances user experience.

Media file processing in the cloud

After you upload files to OSS, you can use the Image Processing service and Media Processing service to process them in the cloud.


Users
OSS
Image Processing
Media Processing

5 Functions

Before you start to use OSS, we recommend that you get familiar with some important OSS concepts, including buckets, objects, regions, endpoints, and AccessKey.

For more information about these concepts, see *Basic concepts*.

OSS provides the following functions to address your business needs in different scenarios.

How do I…?	Function description	Reference
Upload files	Before you can upload any data to OSS, you must create a bucket in an Alibaba Cloud *region* to store your data. After you create a bucket, you can upload an unlimited number of data objects to the bucket.	• *Create a bucket* • *Create a folder* • *Simple upload*
Search files	You can search for files in buckets or folders.	*Search for files*
View and download files	You can use the object URL to view and download the object, or share the object with others.	*Obtain the object URL*
Delete files and folders	You can delete single or multiple objects and folders. You can also delete fragments generated by multipart upload to save storage space.	• *Delete objects* • *Delete folders* • *Delete fragments*

How do I…?	Function description	Reference
Control access permissions for my OSS resources	OSS provides Access Control Lists (ACLs) for permission control. ACLs are access policies that grant access permission s to buckets and objects. You can configure the ACL when creating a bucket or uploading an object, and modify the ACL anytime after the bucket is created or the object is uploaded.	• Set ACL bucket permissions • Set ACL object permissions
Record the detailed information of requests made to my bucket	You can enable logging to automatically record the detailed information of requests made to a bucket.	Set access logging
Prevent data in OSS from being stolen by others	You can configure a referer whitelist for a bucket and configure whether to allow access requests with an empty referer field.	Set anti-leech
Use my own domain to access the data stored in my OSS bucket	You can bind a custom domain to your OSS bucket . Then you can use the custom domain to access data stored in the bucket . You can also enable Alibaba Cloud CDN to speed up the access to the data stored in the bucket.	Bind a custom domain
Enable my client web applications that are loaded in one domain to interact with resources in another domain	OSS provides Cross-Origin Resource Sharing (CORS) settings in the HTML5 protocol. CORS allows client web applications that are loaded in one domain to interact with resources in another domain.	Configure CORS rules

How do I…?	Function description	Reference
Automatically delete objects in batches at specific time	You can configure lifecycle rules to define actions you want OSS to take during the lifetime of specific objects, for example , transition objects to another storage class, archive them, or delete them after a specified period of time.	*Manage object lifecycle*
Synchronize newly created objects, object updates, and object deletions from one bucket to another bucket in a different region	Cross-region replication is the automatic, asynchronous copying of objects across buckets in different regions. It replicates changes (creation, update , and deletion) to objects in the source bucket to the target bucket across different regions.	*Create Cross-region replication rules*
Fetch content from the origin store	You can create back-to -origin rules to define whether to fetch origin data by mirroring or redirection. Back-to-origin rules are usually used for hot migration of data and redirection of specific requests.	*Create back-to-origin rules*
Modify HTTP headers	You can set single or multiple HTTP headers.	*Set object HTTP headers*
View resource usage	You can view real-time information about OSS service usage, such as the status and performance of basic system operations.	*Monitoring service overview*

How do I…?	Function description	Reference
Process images stored in OSS	You can perform different operations on the images stored on OSS, such as format conversion, cropping, scaling, rotation, watermarks, and style encapsulation.	*Image processing*
Use APIs and SDKs	OSS provides RESTful APIs and SDKs for the most popular programming languages.	• *API Reference* • *SDK Reference*

6 Introduction to storage classes

OSS provides three storage classes: Standard, Infrequent Access, and Archive. These storage classes cover various data storage scenarios from frequently accessed (hot) data to infrequently accessed (cold) data.

Standard

OSS Standard storage provides highly reliable, highly available, and high-performance object storage service that supports frequent data access. The high throughput and low latency of OSS make it well suited for storing social networking content such as images, audio, and video. It is also great for storing large unstructured data sets for use in big data analytics.

OSS Standard storage has the following features:

- Designed for 99.999999999% (11 nines) durability.
- Designed for 99.99% availability.
- High-throughput and low-latency access performance.
- Supports HTTPS.
- Supports Image Processing.

Infrequent Access

OSS Infrequent Access storage is suitable for storing long-lived, but less-frequently accessed data (once or twice per month). With a storage unit price lower than the Standard class, it is suitable for longer-term backup of various mobile apps, smart device data, and enterprise data. Objects of the Infrequent Access storage class have a minimum storage duration. Charges apply if you delete objects that have been stored for less than 30 days. Objects of the Infrequent Access storage class have a minimum billable size. Objects smaller than 64 KB are charged as 64 KB. Data retrieval incurs charges.

OSS Infrequent Access storage has the following features:

- Designed for 99.999999999% (11 nines) durability.
- Designed for 99.99% service availability.
- Supports real-time access.
- Supports HTTPS.

- Supports Image Processing.
- Specified minimum storage duration and minimum billable size.

Archive

OSS Archive storage has the lowest price among the three storage classes. It is suitable for storing archival data for a long time (more than half a year recommended), such as medical images, scientific materials, and video footages. The data is infrequently accessed during the storage period and it may take about one minute to restore the data to a readable state. Objects of the Archive storage class have a minimum storage duration. Charges apply if you delete objects that are stored for less than 60 days. Objects of the Archive storage class have a minimum billable size. Objects smaller than 64 KB are charged as 64 KB. Data retrieval incurs charges.

OSS Archive storage has the following features:

- Designed for 99.999999999% (11 nines) durability.
- Designed for 99.99% service availability (restored data).
- It takes one minute to restore the stored data from the frozen state to the readable state.
- Supports HTTPS.
- Supports Image Processing, but data needs to be restored first.
- Specified minimum storage duration and minimum billable size.

Comparison of storage classes

Item	Standard	Infrequent Access	Archive
Data durability	99.999999999%	99.999999999%	99.999999999%
Designed service availability	99.99%	99.99%	99.99% (restored data)
Minimum billed size of objects	Calculate by actual size of objects	64 KB	64 KB
Minimum storage duration	Not required	30 days	60 days
Data retrieval fee	No data retrieval fee	Charged by the size of retrieved data, in GB	Charged by the size of restored data, in GB

Item	Standard	Infrequent Access	Archive
Latency	Latency in ms	Latency in ms	It takes one minute to restore data from the frozen state to the readable state.
Images processing	Supported	Supported	Supported, but data needs to be restored first.

Note:

"Data" in "data retrieval fee" refers to the size of data read from the underlying distributed storage system. The data transferred over the public network is billed as part of the outbound traffic costs.

Supported APIs

API	Standard	Infrequent Access	Archive
Bucket creation, deletion, and query			
PutBucket	Supported	Supported	Supported
GetBucket	Supported	Supported	Supported
DeleteBucket	Supported	Supported	Supported
Bucket ACL			
PutBucketAcl	Supported	Supported	Supported
GetBucketAcl	Supported	Supported	Supported
Bucket logging			
PutBucketLogging	Supported	Supported	Supported
GetBucketLogging	Supported	Supported	Supported
Bucket default static page			
PutBucketWebsite	Supported	Supported	Not supported
GetBucketWebsite	Supported	Supported	Not supported
Bucket anti-leech protection			
PutBucketReferer	Supported	Supported	Supported
GetBucketReferer	Supported	Supported	Supported
Bucket lifecycle			

API	Standard	Infrequent Access	Archive
PutBucketLifecycle	Supported	Supported	Supported, data deletion only
GetBucketLifecycle	Supported	Supported	Supported
DeleteBucketLifecycle	Supported	Supported	Supported
Bucket Cross-Origin Replication			
PutBucketReplication	Supported	Supported	Supported
Bucket Cross-Origin Resource Sharing			
PutBucketcors	Supported	Supported	Supported
GetBucketcors	Supported	Supported	Supported
DeleteBucketcors	Supported	Supported	Supported
Object operations			
PutObject	Supported	Supported	Supported
PutObjectACL	Supported	Supported	Supported
GetObject	Supported	Supported	Supported, but data needs to be restored first
GetObjectACL	Supported	Supported	Supported
GetObjectMeta	Supported	Supported	Supported
HeadObject	Supported	Supported	Supported
CopyObject	Supported	Supported	Supported
OptionObject	Supported	Supported	Supported
DeleteObject	Supported	Supported	Supported
DeleteMultipleObjects	Supported	Supported	Supported
PostObject	Supported	Supported	Supported
PutSymlink	Supported	Supported	Supported
GetSymlink	Supported	Supported	Supported
RestoreObject	Not supported	Not supported	Supported
Multipart operations			

API	Standard	Infrequent Access	Archive
InitiateMultipartUpload	Supported	Supported	Supported
UploadPart	Supported	Supported	Supported
UploadPartCopy	Supported	Supported	Supported
CompleteMultipartUpload	Supported	Supported	Supported
AbortMultipartUpload	Supported	Supported	Supported
ListMultipartUpload	Supported	Supported	Supported
ListParts	Supported	Supported	Supported
Image Processing	Supported	Supported	Supported

7 Limits

OSS has the following restrictions for use:

Restricted item	Description
Archive storage	It takes about one minute to restore data from the frozen state to the readable state.
Bucket	· You can create a maximum of 30 buckets in a region. · The name, region, and storage class of a bucket cannot be modified. · The capacity of each bucket is unlimited.
File upload and download	· The size of each file uploaded by console upload, *simple upload*, *form upload*, and *append upload* cannot be greater than 5 GB. To upload a file greater than 5 GB, you must use *multipart upload*. · The size of each file uploaded by *multipart upload* cannot be greater than 48.8 TB. · The default bandwidth throttling of upload and download is 10 Gbit /s in Mainland China regions and 5 Gbit/s for International regions , Hong Kong, Macau, and Taiwan. Once the throttling is reached, the DownloadTrafficRateLimitExceeded or UploadTrafficRateLimitExceeded error response is returned. If you need a higher bandwidth, contact your local technical support. · If you upload a file with same name as an existing file, the original file is overwritten.

Restricted item	Description
Deleting a file	· Deleted files cannot be restored. · You can delete up to 1,000 files in batches in the console. To delete more files in batches, you must use APIs or SDKs.
Domain name binding	· You must apply for an ICP license for your bound domain name to direct your website to servers located in Mainland China for public visits. · You can bind up to 100 domain names for each bucket.
Lifecycle	You can configure up to 1,000 lifecycle rules for each bucket.
Image processing	For the original image: · Only jpg, png, bmp, gif, webp, and tiff formats are supported. · File size cannot exceed 20 MB. · For the image rotation, the width or height of the image cannot exceed 4096. · The size of a single side cannot exceed 30,000. For a thumbnail: · The product of the width and height cannot exceed 4096 x 4096. · The length of each side cannot exceed 4096.