



Backing Up Data and Applications

Securely, Reliably, and Efficiently



About the service.

Secure your data.

Ensure data integrity.

Authenticate access.

Backup efficiently.

Get started.

About the service.

Oracle Storage Cloud Service is a secure, elastic, reliable, and cost-effective public cloud storage solution. You can access it from anywhere, 24/7, and from any device connected to the Internet. With zero investment in hardware, you can buy just as much enterprise-grade storage capacity as you need today, and buy more as you need it in the future.

Oracle Storage Cloud Service gives you an easy-to-use solution to store, manage, and consume large amounts of unstructured data over the Internet. Your applications can access Oracle Storage Cloud Service programmatically by using either an OpenStack Swift-compatible REST API or Java API. You can monitor key storage metrics and manage users and roles by using a web-based graphical console.

You can apply role-based access control for data stored on Oracle Storage Cloud Service at a very granular level. If required, you can make your data accessible publicly.

Data that you store using Oracle Storage Cloud Service is replicated on multiple storage nodes, guaranteeing protection against hardware failure and data corruption. Your data is never moved out of the data center without your permission.

You can use Oracle Storage Cloud Service as a cost-effective, remote backup solution for your enterprise data and applications. By backing up your data and applications to Oracle Storage Cloud Service, you can avoid large capital and operating expenditures in acquiring and maintaining storage hardware. By automating your backup routine to run at scheduled intervals, you can further reduce the operating cost of running your backup process. In the event of a disaster at your site, the data is safe in a remote location, and you can restore it quickly to your production systems.

To learn more about Oracle Storage Service and to request for a trial subscription, go to cloud.oracle.com/storage.



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Secure your data.

Oracle uses enterprise-grade processes and operations to secure your data. For enhanced security, you can use the client-side encryption feature of the Java library.

A cycle of encryption and decryption ensures that your data remains secure in the cloud.

When you use the client-side encryption feature of the Java library, for every object that you create in Oracle Storage Cloud Service, a unique symmetric key is generated. The Java library uses this key to encrypt your data before storing it. After encrypting your data, the Java library encrypts the symmetric key as an envelope key by using an asymmetric key pair that you provide. The envelope key is then stored as metadata alongside the object data.

When you use the Java library to access such encrypted objects, the envelope key is first retrieved and decrypted by using the asymmetric key pair that you provide. The resulting symmetric key is then used to decrypt the object data.





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Ensure data integrity.

You can use the MD5 checksum and HTTP response code returned by Oracle Storage Cloud Service to validate that your data was stored reliably.

When an object is created in Oracle Storage Cloud Service from an uploaded file, the service returns the MD5 checksum of the object in the ETag header of the HTTP response. The client that initiated the backup can verify whether the file was uploaded correctly by comparing the MD5 checksum provided by the service with a locally calculated checksum.

Every request to Oracle Storage Cloud Service receives an HTTP response containing a status code, which indicates whether the requested operation was completed successfully. The client that initiated the backup can determine whether the data was backed up reliably, by interpreting the status code returned by Oracle Storage Cloud Service.





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Authenticate access.

Oracle Storage Cloud Service authenticates all requests through an authentication token mechanism. Every request to the service must include a valid authentication token, which the service provided previously in response to an authentication request containing a valid user name and password. The authentication token expires after 30 minutes.

If you plan to automate the backup of your data and applications to Oracle Storage Cloud Service, then ensure that a request for a new authentication token is the first operation in each backup cycle. You must also ensure that a request for a new authentication token is sent after every 30 minutes, and that all requests to Oracle Storage Cloud Service include a valid (unexpired) authentication token.

Note that when you use the Java library, you don't need to request and use an authentication token explicitly. The Java library will request and apply the token automatically. The Java library will also request a new authentication token when the current token expires.





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Back up efficiently.

To facilitate the efficient and reliable upload of files that are larger than 5 GB, Oracle Storage Cloud Service supports uploading files in segments. This feature is called dynamic large objects. You can segment a large file into multiple small files, each called a segment and each smaller than 5 GB, and then upload the segments individually to Oracle Storage Cloud Service. You must also create a manifest object, which will be used when the objects are downloaded, to concatenate the retrieved segments in the correct sequence and stream them in a single response. Note that you can use your own convention-based schemes for segmenting large files.

Each operation on Oracle Storage Cloud Service is atomic. It either succeeds completely or fails completely. If the upload of a particular file fails, due to a network problem for example, the file must be uploaded again. Data that was uploaded until the network failure occurred is not saved in the cloud. So before you upload large files, even those that are smaller than 5 GB, consider segmenting them and then uploading the segments individually. With this approach, if the upload of a segment fails, only that segment needs to be uploaded again.

To optimize the storage space you use in Oracle Storage Cloud Service, consider compressing your data before uploading it. When you do this, your data will consume less space in Oracle Storage Cloud Service and will take less time to upload and retrieve.

You can store multiple directories and files in Oracle Storage Cloud Service with a single request, by packaging and compressing them and uploading the resulting tar.gz or tar.bz2 file. In Oracle Storage Cloud Service, a container is created for each top-level directory and an object is created for each file.



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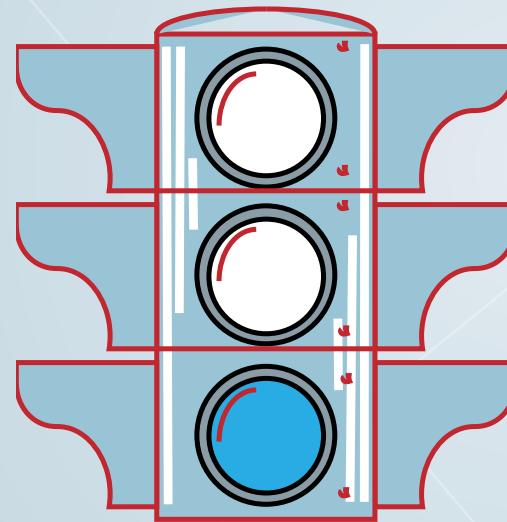
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