IBM Cloud

IBM Cloud 用戶實作研習營

IBM Cloud Object Storage (COS)

使用教學

2019/10/16

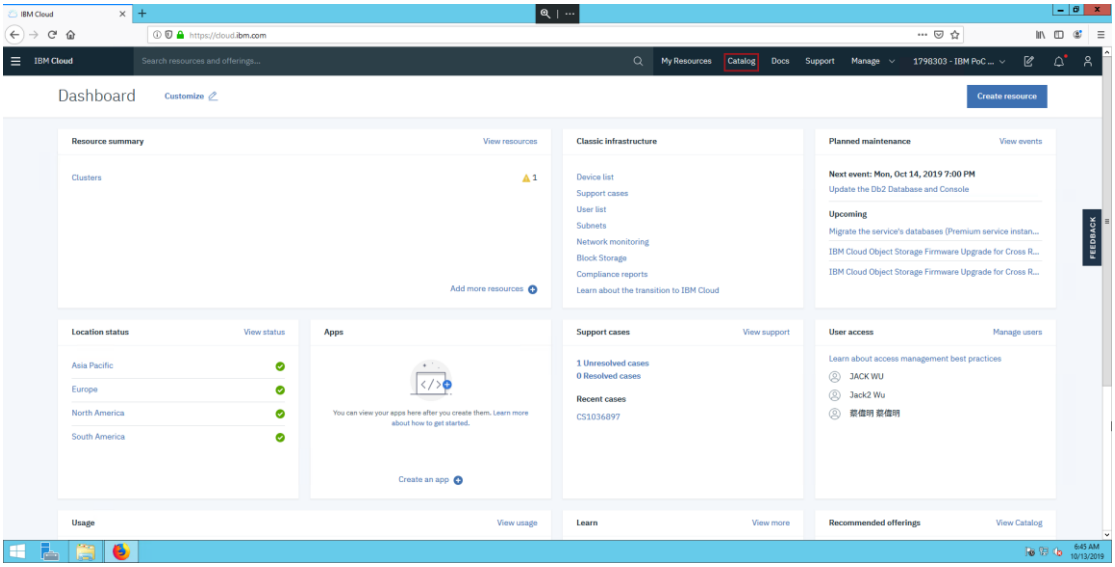
IBM **Cloud**

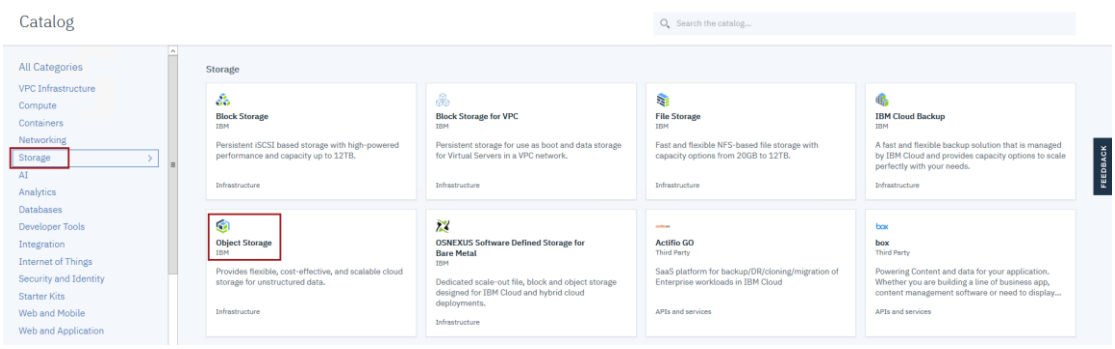
Upload files to IBM Cloud Object Storage

Creating your object storage service instance

Follow these steps to create an IBM Cloud Object Storage service instance.

- Deploy an IBM Cloud Object Storage service instance.
  - Open the **IBM Cloud Object Storage catalog page**.





  - Enter a name for your service instance, such as **cos_"yourID"**
  - Select a resource group: **Workshop**
  - Review the **plan options** for pricing information and select a plan: **Standard**.
  - Click **Create**. The service details page opens.

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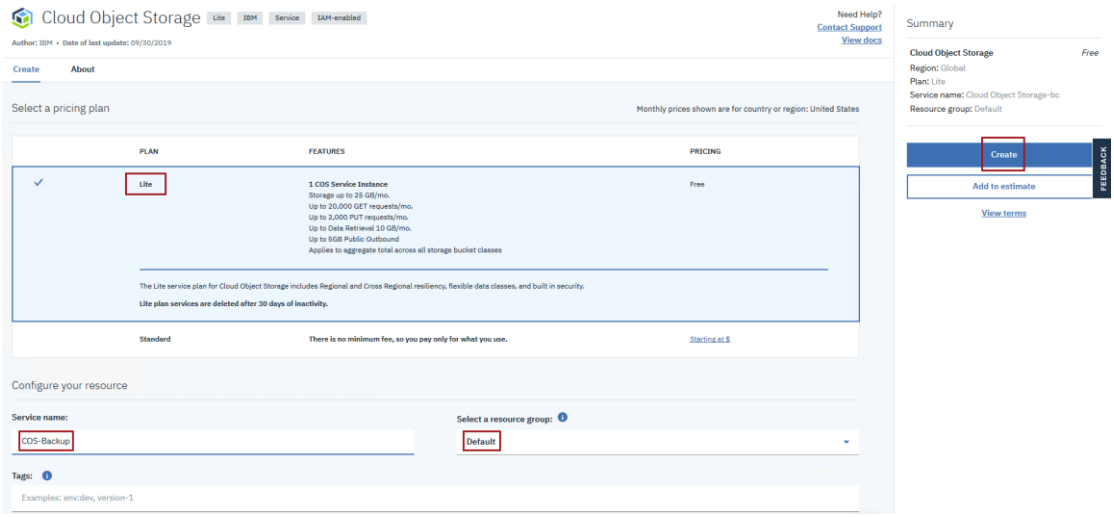
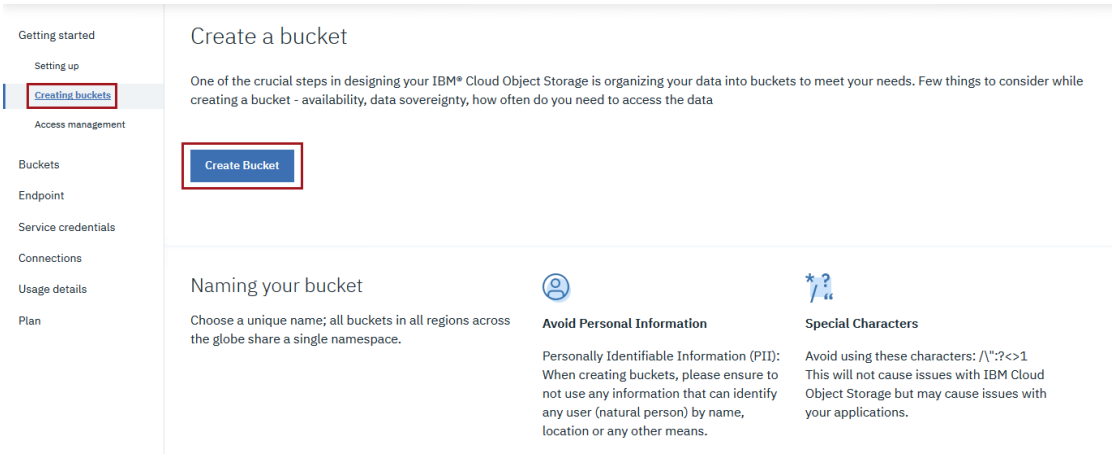
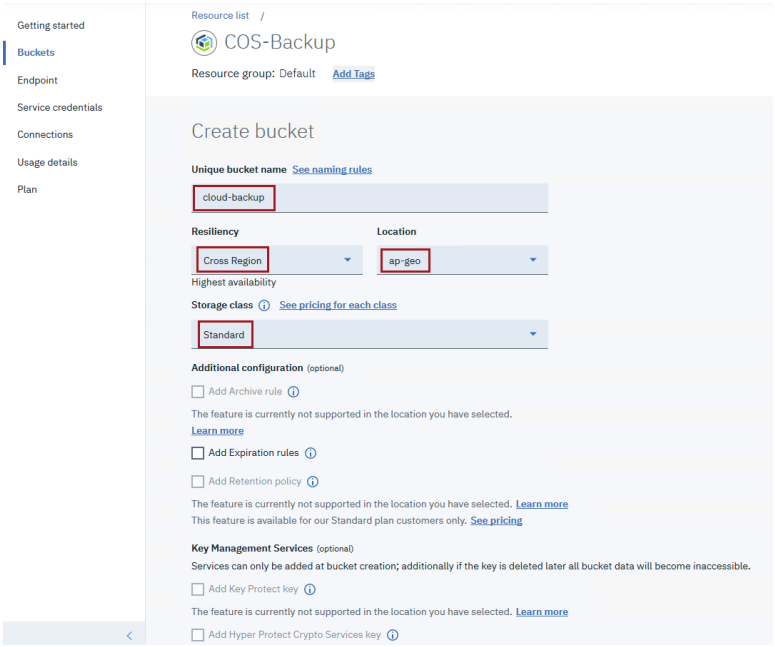
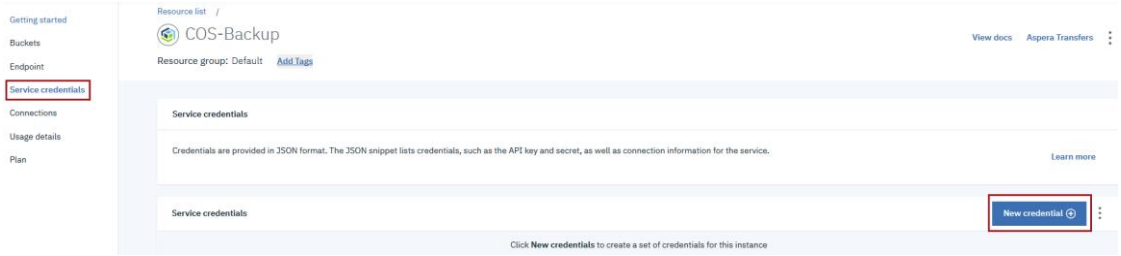


- On the Creating buckets page, Click **Create Bucket**.
- Input bucket name: **bucket_"yourID"**, select Resiliency: **Cross Region**, Location: **ap-geo** and Storage class: **Standard**.

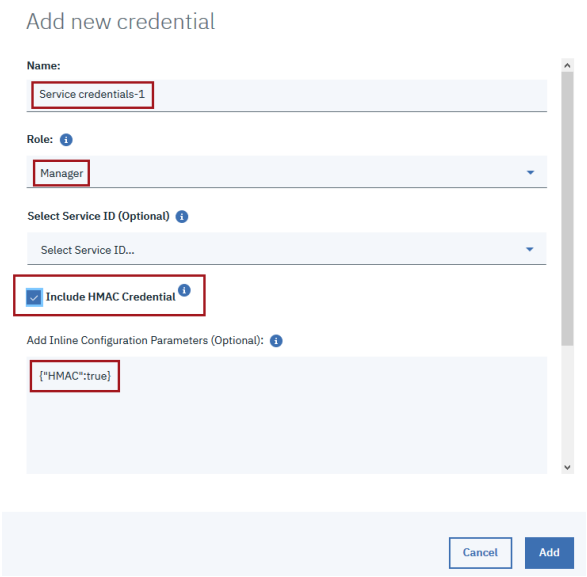




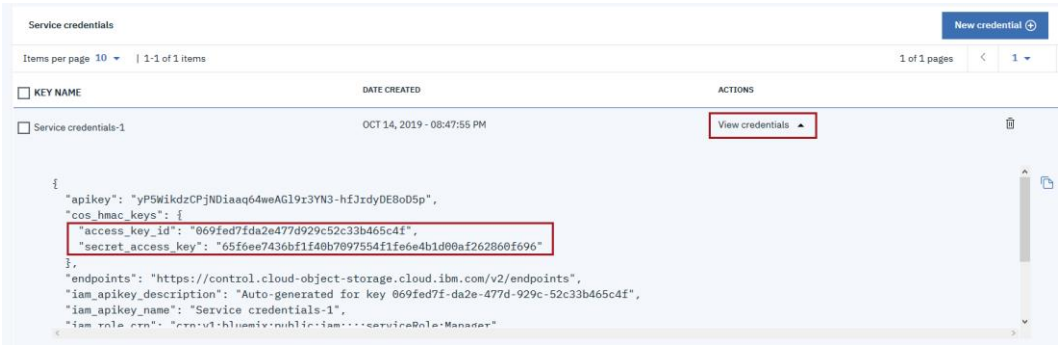
- Retrieve the IBM Cloud Object Storage service credentials.
  - In the navigation on the service details page, click **Service Credentials**.
  - Click **New credential**. A dialog box displays.



  - Enter a name for your credentials.
  - From the **Role** drop-down, select **Manager**. When you select **Reader**, then you cannot use the credentials to create buckets in IBM Cloud Object Storage and write data to it.
  - Select the **Include HMAC credential** item and the system would automatically add **{"HMAC":true}** to the **Add Inline Configuration Parameters (Optional)** content window. HMAC authentication adds an extra layer of security to the OAuth2 authentication by preventing the misuse of expired or randomly created OAuth2 tokens. **Important**: If you have a private-only cluster with no public access, you must use HMAC authentication so that you can access the IBM Cloud Object Storage service over the private network.
  - Click **Add**. Your new credentials are listed in the **Service Credentials** table.



- Click **View credentials**.
- Make note of the **apikey** to use OAuth2 tokens to authenticate with the IBM Cloud Object Storage service. For HMAC authentication, in the **cos_hmac_keys** section, note the **access_key_id** and the **secret_access_key**.



Using rclone

Getting the most out of IBM® Cloud Object Storage when you have access to tools and solutions like **rclone** and the command-line interface (cli).

Install rclone

The **rclone** tool is useful for keeping directories synchronized and for migrating data between storage platforms. It's a Go program and comes as a single binary file.

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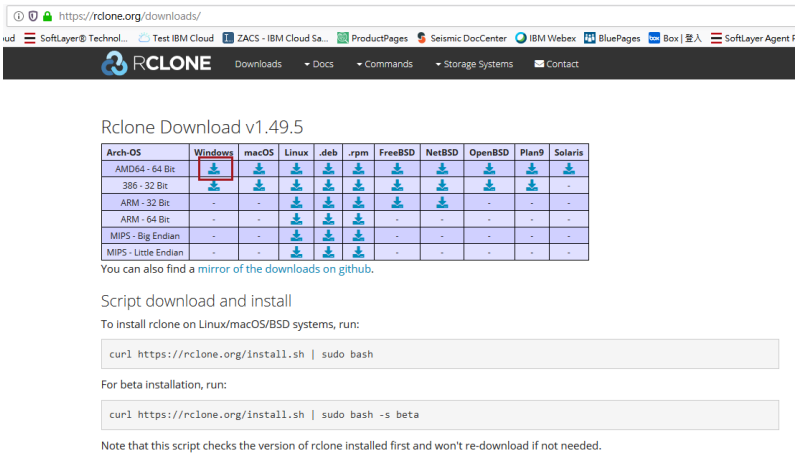
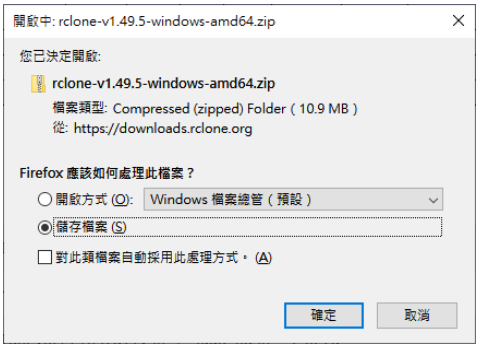
Quickstart Installation

- **Download** the relevant binary.(**https://rclone.org/downloads/**)



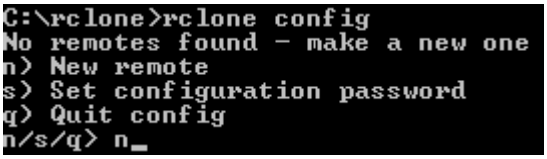


- **Extract** the rclone or rclone.exe binary from the archive.
- Run **rclone config** to set up.

Configure access to IBM COS

- Run **rclone config** and select n for a new remote.

```
No remotes found - make a new one
n) New remote
s) Set configuration password
q) Quit config
n/s/q> n
```



- Enter the name for the configuration:

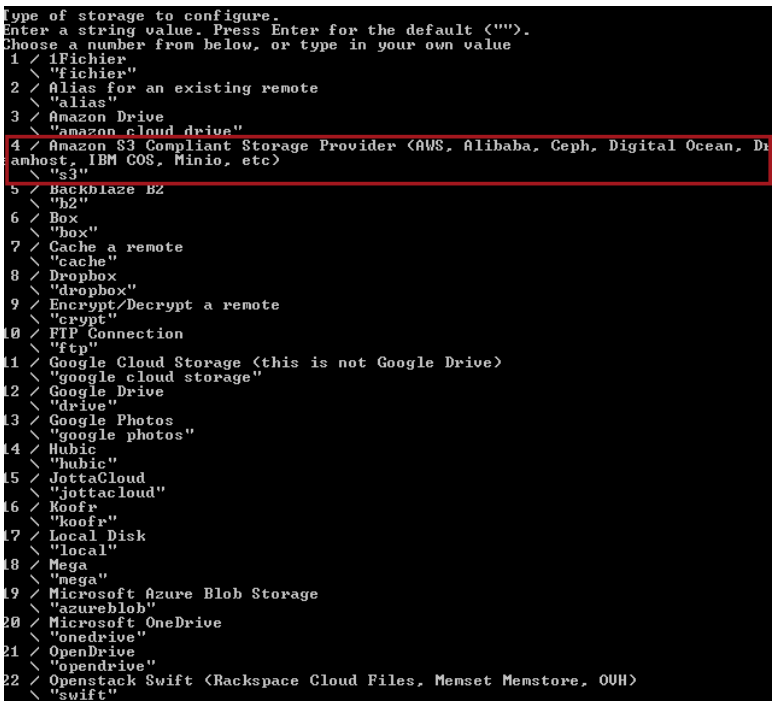
  name> cos_”yourID”

```
name> test_
```

- Select “s3” storage.

  Choose a number from below, or type in your own value

  2 / Alias for a existing remote
  \ "alias"
  3 / Amazon Drive
  \ "amazon cloud drive"
  4 / Amazon S3 Complaint Storage Providers (Dreamhost, Ceph, Minio, IBM COS)
  \ "s3"
  5 / Backblaze B2
  \ "b2"
  [snip]
  23 / http Connection
  \ "http"
  Storage> 4



```
Type of storage to configure.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
 1 / 1Fichier
   \ "fichier"
 2 / Alias for an existing remote
   \ "alias"
 3 / Amazon Drive
   \ "amazon cloud drive"
 4 / Amazon S3 Compliant Storage Provider (AWS, Alibaba, Ceph, Digital Ocean, Dr
amhost, IBM COS, Minio, etc)
   \ "s3"
 5 / Backblaze B2
   \ "b2"
 6 / Box
   \ "box"
 7 / Cache a remote
   \ "cache"
 8 / Dropbox
   \ "dropbox"
 9 / Encrypt/Decrypt a remote
   \ "crypt"
10 / FTP Connection
   \ "ftp"
11 / Google Cloud Storage (this is not Google Drive)
   \ "google cloud storage"
12 / Google Drive
   \ "drive"
13 / Google Photos
   \ "google photos"
14 / Hubic
   \ "hubic"
15 / JottaCloud
   \ "jottacloud"
16 / Koofr
   \ "koofr"
17 / Local Disk
   \ "local"
18 / Mega
   \ "mega"
19 / Microsoft Azure Blob Storage
   \ "azureblob"
20 / Microsoft OneDrive
   \ "onedrive"
21 / OpenDrive
   \ "opendrive"
22 / Openstack Swift (Rackspace Cloud Files, Memset Memstore, OVH)
   \ "swift"
```

```
Storage> 4_
```

- Select IBM COS as the S3 Storage Provider.

  Choose the S3 provider.
  Enter a string value. Press Enter for the default ("")
  Choose a number from below, or type in your own value
  1 / Amazon Web Services (AWS) S3
  \ "AWS"
  3 / Ceph Object Storage
  \ "Ceph"
  4 / Digital Ocean Spaces
  \ "Digital Ocean"
  5 / Dreamhost DreamObjects
  \ "Dreamhost"
  6 / IBM COS S3
  \ "IBMCOS"
  [snip]
  Provider>6

```
** See help for s3 backend at: https://rclone.org/s3/ **

Choose your S3 provider.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
 1 / Amazon Web Services (AWS) S3
   \ "AWS"
 2 / Alibaba Cloud Object Storage System (OSS) formerly Aliyun
   \ "Alibaba"
 3 / Ceph Object Storage
   \ "Ceph"
 4 / Digital Ocean Spaces
   \ "DigitalOcean"
 5 / Dreamhost DreamObjects
   \ "Dreamhost"
 6 / IBM COS S3
   \ "IBMCOS"
 7 / Minio Object Storage
   \ "Minio"
 8 / Netease Object Storage (NOS)
   \ "Netease"
 9 / Wasabi Object Storage
   \ "Wasabi"
10 / Any other S3 compatible provider
   \ "Other"
provider> 6_
```

- Enter **False** or **1** to enter your credentials.

  Get AWS credentials from the runtime (environment variables or EC2/ECS meta data if no env vars).
  Only applies if access_key_id and secret_access_key is blank.
  Enter a boolean value (true or false). Please Enter for the default ("false").
  Choose a number from below, or type in your own value
  1 / Enter AWS credentials in the next step

\ "false"

2 / Get AWS credentials from the environment (env vars or IAM)

\ "true"

env_auth>false or 1

```
Get AWS credentials from runtime (environment variables or EC2/ECS meta data if
no env vars).
Only applies if access_key_id and secret_access_key is blank.
Enter a boolean value (true or false). Press Enter for the default ("false").
Choose a number from below, or type in your own value
 1 / Enter AWS credentials in the next step
   \ "false"
 2 / Get AWS credentials from the environment (env vars or IAM)
   \ "true"
env_auth> 1_
```

- Enter the Access Key ID and Secret Access Key.

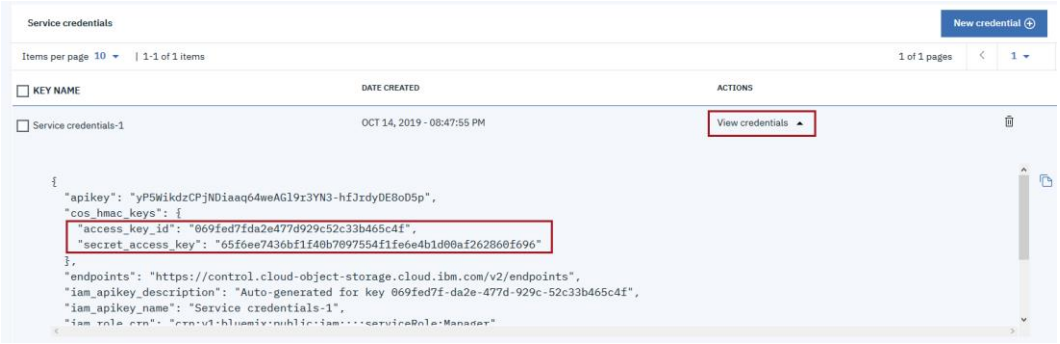
AWS Access Key ID - leave blank for anonymous access or runtime credentials.

access_key_id> <>

AWS Secret Access Key (password) - leave blank for anonymous access or runtime credentials.

secret_access_key> <>

```
AWS Access Key ID.
Leave blank for anonymous access or runtime credentials.
Enter a string value. Press Enter for the default ("").
access_key_id> 069fed7fda2e477d929c52c33b465c4f
AWS Secret Access Key (password)
Leave blank for anonymous access or runtime credentials.
Enter a string value. Press Enter for the default ("").
secret_access_key> 65f6ee7436bf1f40b7097554f1fe6e4b1d00af262860f696
```




```
Region to connect to.
Leave blank if you are using an S3 clone and you don't have a region.
Enter a string value. Press Enter for the default ("").
Choose a number from below, or type in your own value
 1 / Use this if unsure. Will use v4 signatures and an empty region.
   \ ""
 2 / Use this only if v4 signatures don't work, eg pre Jewel/v10 CEPH.
   \ "other-v2-signature"
region> 1_
```

- Specify the endpoint for IBM COS. For Public IBM COS, choose from the provided options. For more information about endpoints, see Endpoints and storage locations.

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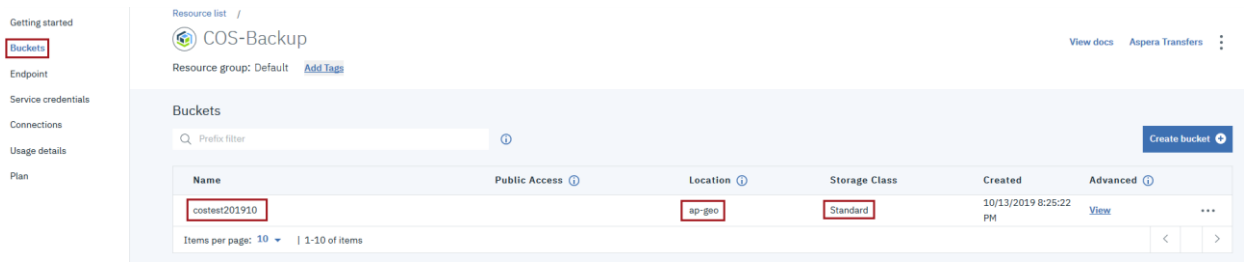
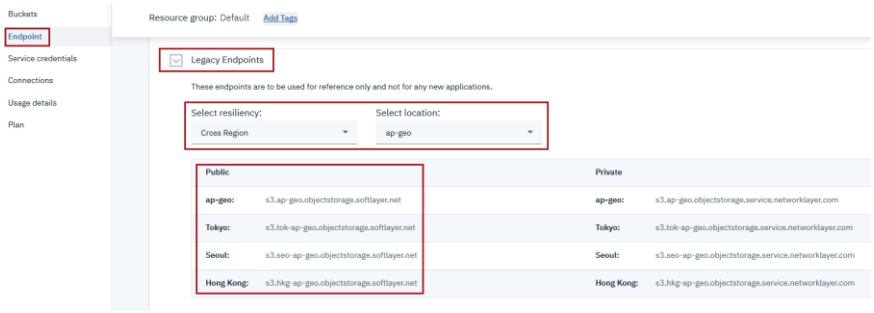
Endpoint for IBM COS S3 API.
Choose a number from below, or type in your own value
1 / US Cross Region Endpoint
\ "s3.us.cloud-object-storage.appdomain.cloud"
2 / US Cross Region Dallas Endpoint
\ "s3-api.dal.us-geo.objectstorage.s3.us-south.cloud-object-storage.appdomain.cloud.net"
3 / US Cross Region Washington DC Endpoint
\ "s3-api.wdc-us-geo.objectstorage.s3.us-south.cloud-object-storage.appdomain.cloud.net"
4 / US Cross Region San Jose Endpoint
\ "s3-api.sjc-us-geo.objectstorage.s3.us-south.cloud-object-storage.appdomain.cloud.net"
5 / US Cross Region Private Endpoint
\ "s3-api.us-geo.objectstorage.service.networklayer.com"
[snip]
34 / Toronto Single Site Private Endpoint
\ "s3.tor01.objectstorage.service.networklayer.com"
endpoint>23



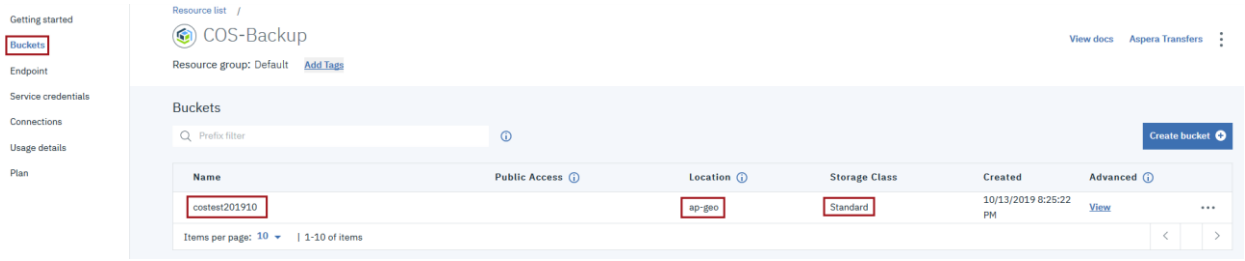


- Specify an IBM COS Location Constraint. The location constraint must match the endpoint. For more information about endpoints, see Endpoints and storage locations.

  1 / US Cross Region Standard

\ "us-standard"
2 / US Cross Region Vault
\ "us-vault"
3 / US Cross Region Cold
\ "us-cold"
4 / US Cross Region Flex
\ "us-flex"
5 / US East Region Standard
\ "us-east-standard"
[snip]
32 / Toronto Flex
\ "tor01-flex"
location_constraint>21

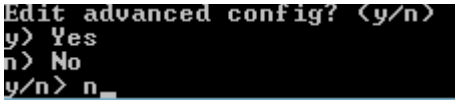
```
 9 / US South Region Standard
   \ "us-south-standard"
10 / US South Region Vault
   \ "us-south-vault"
11 / US South Region Cold
   \ "us-south-cold"
12 / US South Region Flex
   \ "us-south-flex"
13 / EU Cross Region Standard
   \ "eu-standard"
14 / EU Cross Region Vault
   \ "eu-vault"
15 / EU Cross Region Cold
   \ "eu-cold"
16 / EU Cross Region Flex
   \ "eu-flex"
17 / Great Britain Standard
   \ "eu-gb-standard"
18 / Great Britain Vault
   \ "eu-gb-vault"
19 / Great Britain Cold
   \ "eu-gb-cold"
20 / Great Britain Flex
   \ "eu-gb-flex"
21 / APAC Standard
   \ "ap-standard"
22 / APAC Vault
   \ "ap-vault"
23 / APAC Cold
   \ "ap-cold"
24 / APAC Flex
   \ "ap-flex"
25 / Melbourne Standard
   \ "mel01-standard"
26 / Melbourne Vault
   \ "mel01-vault"
27 / Melbourne Cold
   \ "mel01-cold"
28 / Melbourne Flex
   \ "mel01-flex"
29 / Toronto Standard
   \ "tor01-standard"
30 / Toronto Vault
   \ "tor01-vault"
31 / Toronto Cold
   \ "tor01-cold"
32 / Toronto Flex
   \ "tor01-flex"
location_constraint> 21_
```



- Specify an ACL. Only public-read and private are supported.

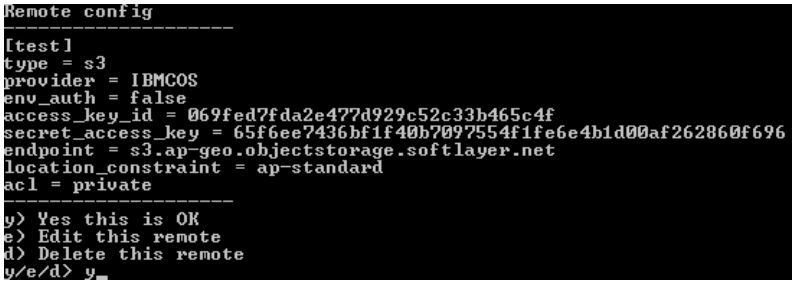
Canned ACL used when creating buckets and/or storing objects in S3.
Choose a number from below, or type in your own value
1 "private"
2 "public-read"
3
4
acl>1

- Do not edit advanced config



- Review the displayed configuration and accept to save the “remote” then quit. The config file should look like this

[YOUR NAME]
type = s3
Provider = IBMCOS
access_key_id = xxx
secret_access_key = yyy
endpoint = s3.ap-geo.objectstorage.softlayer.net
location_constraint = ap-standard
acl = private



- Run command to test:
  rclone copy source_path/file.txt RemoteName:newbucket

  RemoteName: cos_"yourID"
  newbucket: bucket_"yourID"

Command reference

Create a bucket

rclone mkdir RemoteName:newbucket

List available buckets

rclone lsd RemoteName:

List contents of a bucket

rclone ls RemoteName:newbucket

Copy a file from local to remote

rclone copy /Users/file.txt RemoteName:newbucket

Copy a file from remote to local

rclone copy RemoteName:newbucket/file.txt /Users/Documents/

Delete a file on remote

rclone delete RemoteName:newbucket/file.txt

List Commands

There are several related list commands

- ls to list size and path of objects only
- lsl to list modification time, size, and path of objects only
- lsd to list directories only

- lsf to list objects and directories in easy to parse format
- lsjson to list objects and directories in JSON format

rclone sync

The sync operation makes the source and destination identical, and modifies the destination only. Syncing doesn't transfer unchanged files, testing by size and modification time or MD5SUM. Destination is updated to match source, including deleting files if necessary. Since this operation can cause data loss, test first with the --dry-run flag to see exactly what would be copied and deleted.
If dest:path doesn't exist, it is created and the source:path contents go there.

rclone sync source:path dest:path [flags]

rclone sync local_directory dest:path [flags]

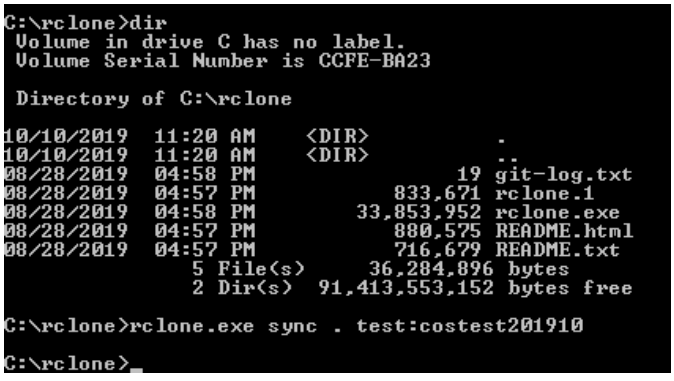
Scheduling a Job

Before scheduling a job, make sure that you have done your initial upload and it has completed.

Windows

- Create a text file that is called backup.bat somewhere on your computer and paste in the command you used in the section about syncing a directory. Specify the full path to the rclone.exe and don't forget to save the file.

  C:\full\path\to\rclone.exe sync "C:\path\to\my\backup\directory" RemoteName:newbucket



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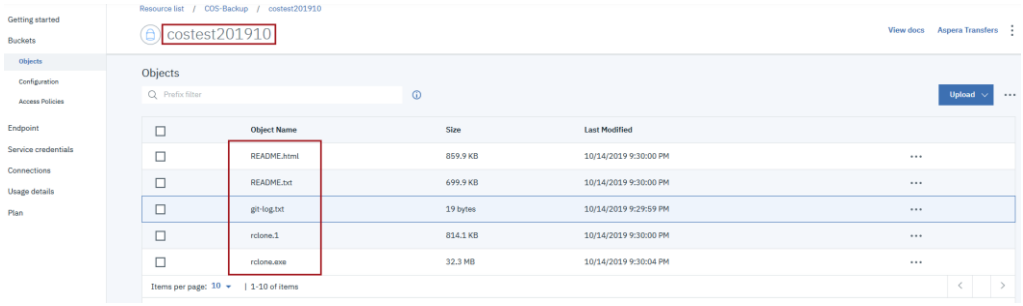

- Use schtasks to schedule a job. This utility takes a number of parameters.
  - /RU – the user to run the job as. This is needed if the user you want to use is logged out.
  - /RP – the password for the user.
  - /SC – set to DAILY
  - /TN – the name of the job. Call it backup
  - /TR – the path to the backup.bat file you created.
  - /ST – the time to start the task. This is in the 24-hour time format. 01:05:00 is 1:05 AM. 13:05:00 would be 1:05 PM.

schtasks /Create /RU username /RP "password" /SC DAILY /TN Backup /TR C:\path\to\backup.bat /ST 01:05:00