Google Certified

Associate Cloud Engineer

Batch-2011 | Moon International Karachi Pakistan

khawarhere@gmail.com

Lesson Plan

3. GCS: Storage
    3.1. Create Bucket
        3.1.1. Bucket Names
        3.1.2. Bucket Locations
        3.1.3. Bucket Storage Classes
        3.1.4. Bucket Control Access
        3.1.5. Bucket Advanced Settings
    3.2. Upload Objects in Bucket
        3.2.1. Sharing Objects publicly
    3.3. gsutil
        3.3.1. file versioning
        3.3.2. upload files

3.1 Create Bucket

- Buckets are the basic containers that hold your data.
- Unlike directories and folders, you cannot nest buckets.
- Because there are limits to bucket creation and deletion, you should design your storage applications to favor intensive object operations and relatively few buckets operations.
- Visit name and location consideration and Storage classes.

1. Go to the Google Cloud Platform Console.
2. Navigation > Storage (also pin it)
3. Create bucket

3.1.1 Bucket Name

- Must follow the requirement instructions
- Every bucket name is unique and publicly visible. So don’t keep sensitive data inside name.
- After delete, you can use the same name.
- Cannot change the name of an existing bucket.

1. Give bucket name => my-test-bucket
2. Click Continue to proceed

3.1.2 Bucket Location

- There are different location types:
  - **region** is a specific geographic place, such as London.
  - **dual-region** is a specific pair of regions, such as Finland and the Netherlands.
  - **multi-region** is a large geographic area, such as the United States.
- Good location balances latency, availability, and bandwidth costs.

1. Location type => Multiregion
2. Location => us (multiple regions in United States)
3. Continue

3.1.3 Bucket Storage Classes

- Affects the object's availability and pricing
- Objects inherits storage class of bucket.
- Changing of bucket storage class, do not change object’s class, which already exists.
- See description of each class in details

1. Storage Class => Standard
2. Continue

3.1.4 Bucket Control Access

- Systems for granting users permission to access your buckets and objects:
- A Cloud IAM permission applied at the bucket level applies to all objects in the bucket, whereas object ACLs may vary from object to object.
- See the Bucket Control Access in details

1. Access control model => Set object-level and bucket-level permission.
2. Continue

3.1.5 Bucket Advanced Settings

- Systems for granting users permission to access your buckets and objects:
- Set a retention policy to specify the minimum duration that this bucket's objects must be protected from deletion or modification after they're uploaded.
- Labels are key:value pairs that allow you to group related buckets together or with other Cloud Platform resources.

1. Encryption => Google-managed key
2. Retention policy => unchecked
3. Labels =>
    a. department : finance
    b. usertype : gold
4. Continue
5. Try to edit bucket attributes.
6. Make the whole bucket public.

3.2 Upload Objects in Bucket

- You can upload multiple files by browser uploader, drag n drop files.
- Can upload entire folder, or can create empty folder inside bucket.
- When files opened in browser they are with long signed request to be able to view.
- By default these are not public, you can set permissions to view publicly.

1. View List Buckets
2. Click on newly created bucket.
3. Click => Upload files
4. Click link on newly uploaded file to view in browser.

3.2.1 Sharing Objects publicly

- Public objects can be accessed by anyone on the Internet. To remove public access, search for and remove 'allUsers' and 'allAuthenticatedUsers' from the object's permissions.
- Object = File

1. Go to Objects list in bucket
2. Left dotted button => Edit permissions
3. Set values
    a. Entity : User
    b. Name : allUsers
    c. Access : Reader
4. View the public link
5. Remove public permission
6. Create folders
7. Try to access private file with name link.

3.3 GCS with gsutil (command line)

- gsutil is a Python application that lets you access Cloud Storage from the command line.
- How to guide for complete set of operations using gsutil

1. Login into GCP console
2. Open cloud shell and set config
    a. # gcloud config list
    b. # gcloud config set project project-id
3. Perform gsutil operations e.g :
    a. # gsutil ls
    b. # gsutil ls gs://<bucket-name>
    c. # gsutil ls gs://<bucket-name>/**
    d. # gsutil mb --help