


Cloud Storage: Qwik Start - CLI/SDK

Activate Cloud Shell

Cloud Shell is a virtual machine that is loaded with development tools. It offers a persistent 5GB home directory and runs on the Google Cloud. Cloud Shell provides command-line access to your Google Cloud resources.

1. Click **Activate Cloud Shell**  at the top of the Google Cloud console.
2. Click through the following windows:
 - Continue through the Cloud Shell information window.
 - Authorize Cloud Shell to use your credentials to make Google Cloud API calls.

When you are connected, you are already authenticated, and the project is set to your **Project_ID**, `PROJECT_ID`. The output contains a line that declares the **Project_ID** for this session:

```
Your Cloud Platform project in this session is set to "PROJECT ID"
```

`gcloud` is the command-line tool for Google Cloud. It comes pre-installed on Cloud Shell and supports tab-completion.

3. (Optional) You can list the active account name with this command:

```
gcloud auth list
```

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```
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```

4. Click **Authorize**.

Output:

```
ACTIVE: *
ACCOUNT: "ACCOUNT"

To set the active account, run:
$ gcloud config set account `ACCOUNT`
```

5. (Optional) You can list the project ID with this command:

```
gcloud config list project
```

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Output:

```
[core]  
project = "PROJECT_ID"
```

Note: For full documentation of `gcloud`, in Google Cloud, refer to [the gcloud CLI overview guide](#).

Set the region

Set the project region for this lab:

```
gcloud config set compute/region "REGION"
```

Task 1. Create a bucket

In this lab you use [gcloud storage](#) and [gsutil](#) commands.

When you create a bucket you must follow the universal bucket naming rules, below.

Bucket naming rules

- Do not include sensitive information in the bucket name, because the bucket namespace is global and publicly visible.
- Bucket names must contain only lowercase letters, numbers, dashes (-), underscores (_), and dots (.). Names containing dots require [verification](#).
- Bucket names must start and end with a number or letter.
- Bucket names must contain 3 to 63 characters. Names containing dots can contain up to 222 characters, but each dot-separated component can be no longer than 63 characters.
- Bucket names cannot be represented as an IP address in dotted-decimal notation (for example, 192.168.5.4).
- Bucket names cannot begin with the "goog" prefix.
- Bucket names cannot contain "google" or close misspellings of "google".
- Also, for DNS compliance and future compatibility, you should not use underscores (_) or have a period adjacent to another period or dash. For example, ".." or "-." or ".-" are not valid in DNS names.

Use the `make bucket` (`buckets create`) command to make a bucket, replacing `<YOUR_BUCKET_NAME>` with a unique name that follows the bucket naming rules:

```
gcloud storage buckets create gs://<YOUR-BUCKET-NAME>
```

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This command is creating a bucket with default settings. To see what those default settings are, use the Cloud console **Navigation menu** > **Cloud Storage**, then click on your bucket name, and click on the **Configuration** tab.

That's it — you've just created a Cloud Storage bucket!

Note: If the bucket name is already taken, either by you or someone else, the command returns:

```
Creating gs://YOUR-BUCKET-NAME/...
ServiceException: 409 Bucket YOUR-BUCKET-NAME already exists.
```

Try again with a different bucket name.

Task 2. Upload an object into your bucket

Use Cloud Shell to upload an object into a bucket.

1. To download this image (`ada.jpg`) into your bucket, enter this command into Cloud Shell:

```
curl https://upload.wikimedia.org/wikipedia/commons/thumb/a/a4/Ada_Lovelace_portrait.jpg/800px-Ada_Lovelace_portrait.jpg --output ada.jpg
```

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2. Use the `gcloud storage cp` command to upload the image from the location where you saved it to the bucket you created:

```
gcloud storage cp ada.jpg gs://YOUR-BUCKET-NAME
```

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Note: When typing your bucket name, you can use the tab key to autocomplete it.

You can see the image load into your bucket from the command line.

You've just stored an object in your bucket!

3. Now remove the downloaded image:

```
rm ada.jpg
```

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Task 3. Download an object from your bucket

- Use the `gcloud storage cp` command to download the image you stored in your bucket to Cloud Shell:

```
gcloud storage cp -r gs://YOUR-BUCKET-NAME/ada.jpg .
```

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If successful, the command returns:

```
Copying gs://YOUR-BUCKET-NAME/ada.jpg...
/ [1 files][360.1 KiB/2360.1 KiB]
Operation completed over 1 objects/360.1 KiB.
```

You've just downloaded the image from your bucket.

Task 4. Copy an object to a folder in the bucket

- Use the `gcloud storage cp` command to create a folder called `image-folder` and copy the image (`ada.jpg`) into it:

```
gcloud storage cp gs://YOUR-BUCKET-NAME/ada.jpg gs://YOUR-BUCKET-NAME/image-folder/
```

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Note: Compared to local file systems, [folders in Cloud Storage](#) have limitations, but many of the same operations are supported.

If successful, the command returns:

```
Copying gs://YOUR-BUCKET-NAME/ada.jpg [Content-Type=image/png]...
- [1 files] [ 360.1 KiB/ 360.1 KiB]
Operation completed over 1 objects/360.1 KiB
```

The image file has been copied into a new folder in your bucket.

Task 5. List contents of a bucket or folder

- Use the `gcloud storage ls` command to list the contents of the bucket:

```
gcloud storage ls gs://YOUR-BUCKET-NAME
```

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If successful, the command returns a message similar to:

```
gs://YOUR-BUCKET-NAME/ada.jpg
gs://YOUR-BUCKET-NAME/image-folder/
```

That's everything currently in your bucket.

Task 6. List details for an object

- Use the `gcloud storage ls` command, with the `-l` flag to get some details about the image file you uploaded to your bucket:

```
gcloud storage ls -l gs://YOUR-BUCKET-NAME/ada.jpg
```

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If successful, the command returns a message similar to:

```
306768 2017-12-26T16:07:57Z gs://YOUR-BUCKET-NAME/ada.jpg
TOTAL: 1 objects, 30678 bytes (360.1 KiB)
```

Now you know the image's size and date of creation.

Task 7. Make your object publicly accessible

- Use the `gsutil acl ch` command to grant all users read permission for the object stored in your bucket:

```
gsutil acl ch -u AllUsers:R gs://YOUR-BUCKET-NAME/ada.jpg
```

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If successful, the command returns:

```
Updated ACL on gs://YOUR-BUCKET-NAME/ada.jpg
```

Your image is now public, and can be made available to anyone.

Task 8. Remove public access

1. To remove this permission, use the command:

```
gsutil acl ch -d AllUsers gs://YOUR-BUCKET-NAME/ada.jpg
```

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If successful, the command returns:

```
Updated ACL on gs://YOUR-BUCKET-NAME/ada.jpg
```

You have removed public access to this object.

2. Verify that you've removed public access by clicking the **Refresh** button in the console. The checkmark will be removed.

Delete objects

1. Use the `gcloud storage rm` command to delete an object - the image file in your bucket:

```
gcloud storage rm gs://YOUR-BUCKET-NAME/ada.jpg
```

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If successful, the command returns:

```
Removing gs://YOUR-BUCKET-NAME/ada.jpg...
```

2. Refresh the console. The copy of the image file is no longer stored on Cloud Storage (though the copy you made in the `image-folder/` folder still exists).