**Understanding Service Accounts and Scopes on Google Compute Engine**

**Introduction**

In this hands-on lab, we are going to demonstrate working with legacy scopes using the default Compute Engine service account on Google Compute Engine.

Be sure to copy/paste the bucket name we will be using to a textpad for easy reference.

**Solution**

Begin by logging in to the *GCP Console* in an incognito (or other private browser window) using the credentials provided on the hands-on lab page.

Right click on the **Open GCP Console** button and choose **New Incognito Window**.

**Copy/paste the bucket ID we will be using**

1. Click the three bars in the top-left to open the menu and click on **IAM & admin**.
2. Verify that the **Compute Engine default service account** member has the **Editor** *Role*.
3. Open the top-left menu and select **Storage**.
4. Highlight the *Name* of the bucket that ends with scope-lab and copy it to another notepad.

**First instance - Read Only Storage scope**

Create a Compute Engine instance with a Read Only service account scope, and attempt to copy a file to it.

1. Navigate to the **Compute Engine** section, using the menu in the top-left of the page.
2. Click **Create**.
3. In the *Identity and API access* section:
   * **Access scopes**: Set access for each API
   * **Storage**: Read Only
4. Click **Create**

After about 30 seconds, the Compute Engine instance will show in the *VM instances* list.

1. Click **SSH** under the *Connect* section.
2. View the Google Cloud SDK configuration:

gcloud config list

1. Attempt to read contents of the Cloud Storage bucket:

**Note**: Be sure to replace BUCKET\_NAME with the bucket name we copied in Step 1.

gsutil ls gs://BUCKET\_NAME

1. Attempt to write a file to the same Cloud Storage bucket (this operation will fail). Creating the file will work, but copying it over will not.

touch file1 gsutil cp file1 gs://BUCKET\_NAME

1. Close the SSH session tab.

exit

**Second instance - Read Write Storage scope**

In your second instance, attempt to copy a file to the cloud storage bucket. It should succeed.

1. Click **CREATE INSTANCE**.
2. In the *Identity and API access* section:
   * **Access scopes**: Set access for each API
   * **Storage**: Read Write
3. Click **Create**

After about 30 seconds, the Compute Engine instance will show in the *VM instances* list.

1. Click **SSH** under the *Connect* section.
2. Attempt to read contents of the Cloud Storage bucket:

**Note**: Be sure to replace BUCKET\_NAME with the bucket name we copied in Step 1.

gsutil ls gs://BUCKET\_NAME

1. Attempt to write a file to the same Cloud Storage bucket (this copy operation should now succeed).

touch file1 gsutil cp file1 gs://BUCKET\_NAME

1. Close the SSH session tab.

exit

**Conclusion**

Congratulations, you've completed this hands-on lab!