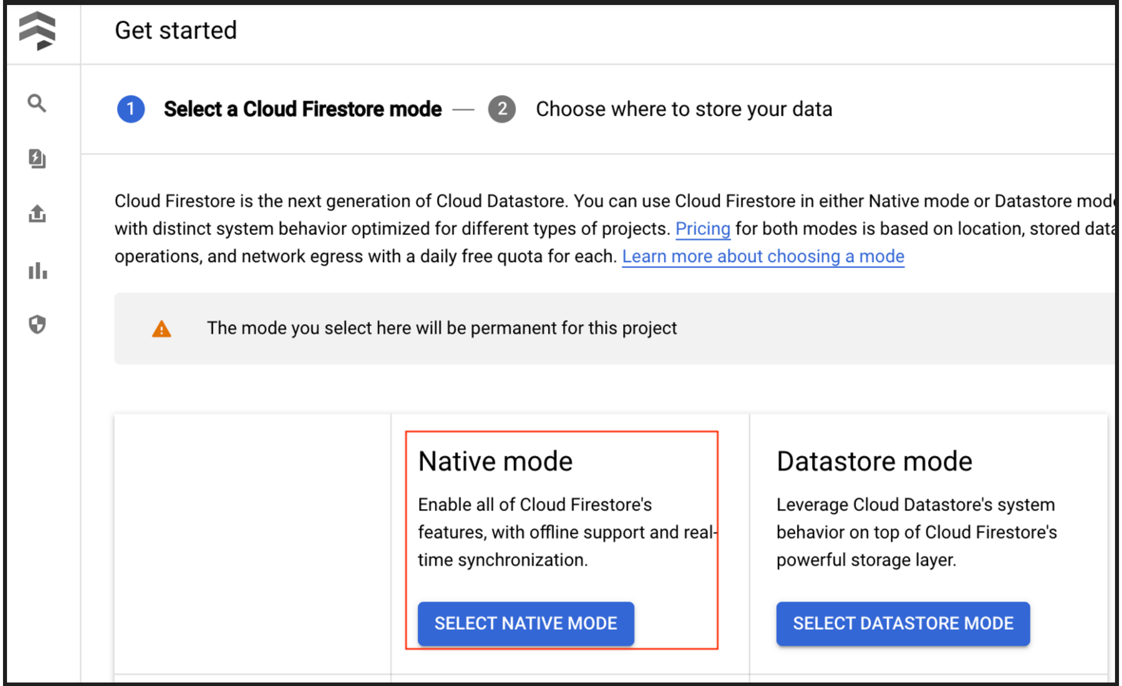
This document provides guidance for connecting to Google's Cloud Console, Firestore. The content and images are primarily derived from Dimitris Trihinas' notes for the Big Data Management and Processing course in the MSc in Data Science, with some modifications made by me.

Getting Started – preliminary.

1. To get started, navigate to the Google Cloud console and select an existing project or create a new one from the https://console.cloud.google.com/projectselector2/home/dashboard) view.

2. After selecting a project, select from the navigation menu Firestore under the Databases segment.

3. From the Select a database service screen, choose Firestore in **Native** mode.


Get started

1 Select a Cloud Firestore mode — 2 Choose where to store your data

Cloud Firestore is the next generation of Cloud Datastore. You can use Cloud Firestore in either Native mode or Datastore mod with distinct system behavior optimized for different types of projects. Pricing for both modes is based on location, stored data operations, and network egress with a daily free quota for each. Learn more about choosing a mode

⚠ The mode you select here will be permanent for this project

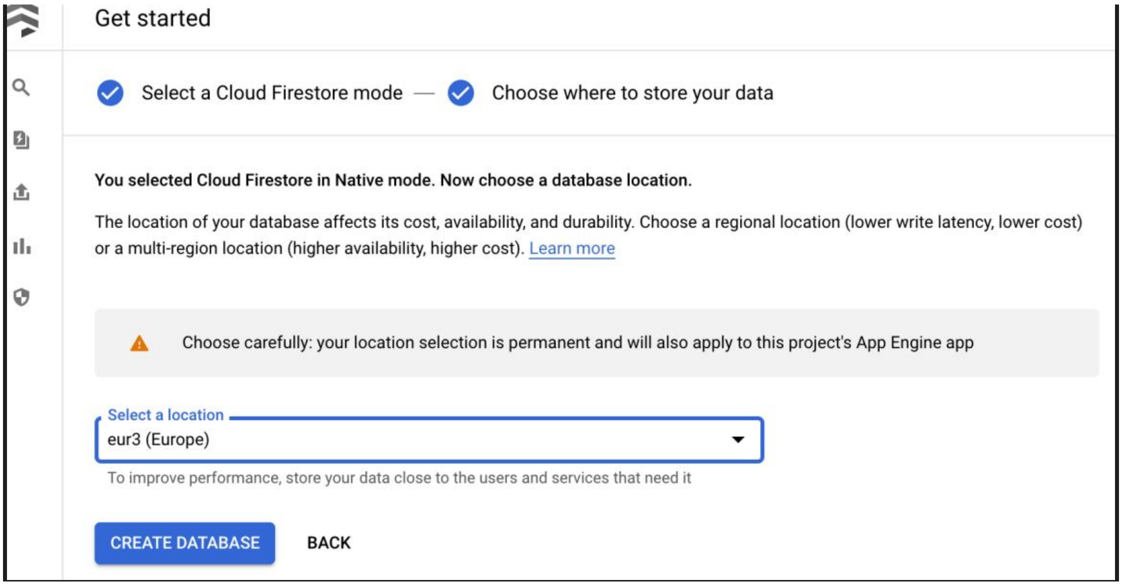
Native mode

Enable all of Cloud Firestore's features, with offline support and real-time synchronization.

Datastore mode

Leverage Cloud Datastore's system behavior on top of Cloud Firestore's powerful storage layer.

4. Select a location for your database (i.e., europe `eur3`) and click, Create Database.



Get started

Select a Cloud Firestore mode — Choose where to store your data

You selected Cloud Firestore in Native mode. Now choose a database location.

The location of your database affects its cost, availability, and durability. Choose a regional location (lower write latency, lower cost) or a multi-region location (higher availability, higher cost). Learn more

Choose carefully: your location selection is permanent and will also apply to this project's App Engine app

Select a location: eur3 (Europe)

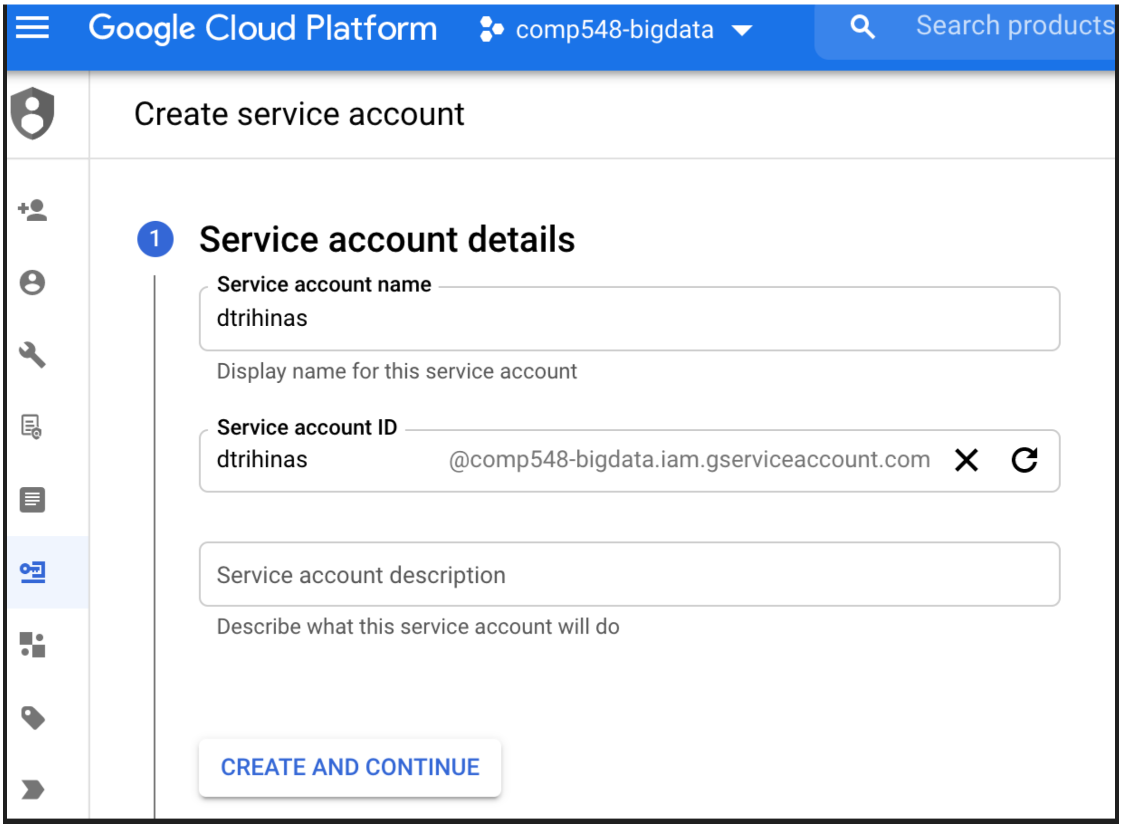
To improve performance, store your data close to the users and services that need it

Setting up the Authentication

```
1. In Google Cloud navigate to the 'Create Service Account' with this
https://console.cloud.google.com/projectselector/iam-admin/serviceaccounts/create?supportedpurview=project).

2. Select the project you have associated with the created database.

3. In the `Service account name` field, enter a name. The Cloud Console
fills in the Service account ID field based on this name. When done,
click Create and Continue.
```



1 Service account details

Service account name: dtrihinas

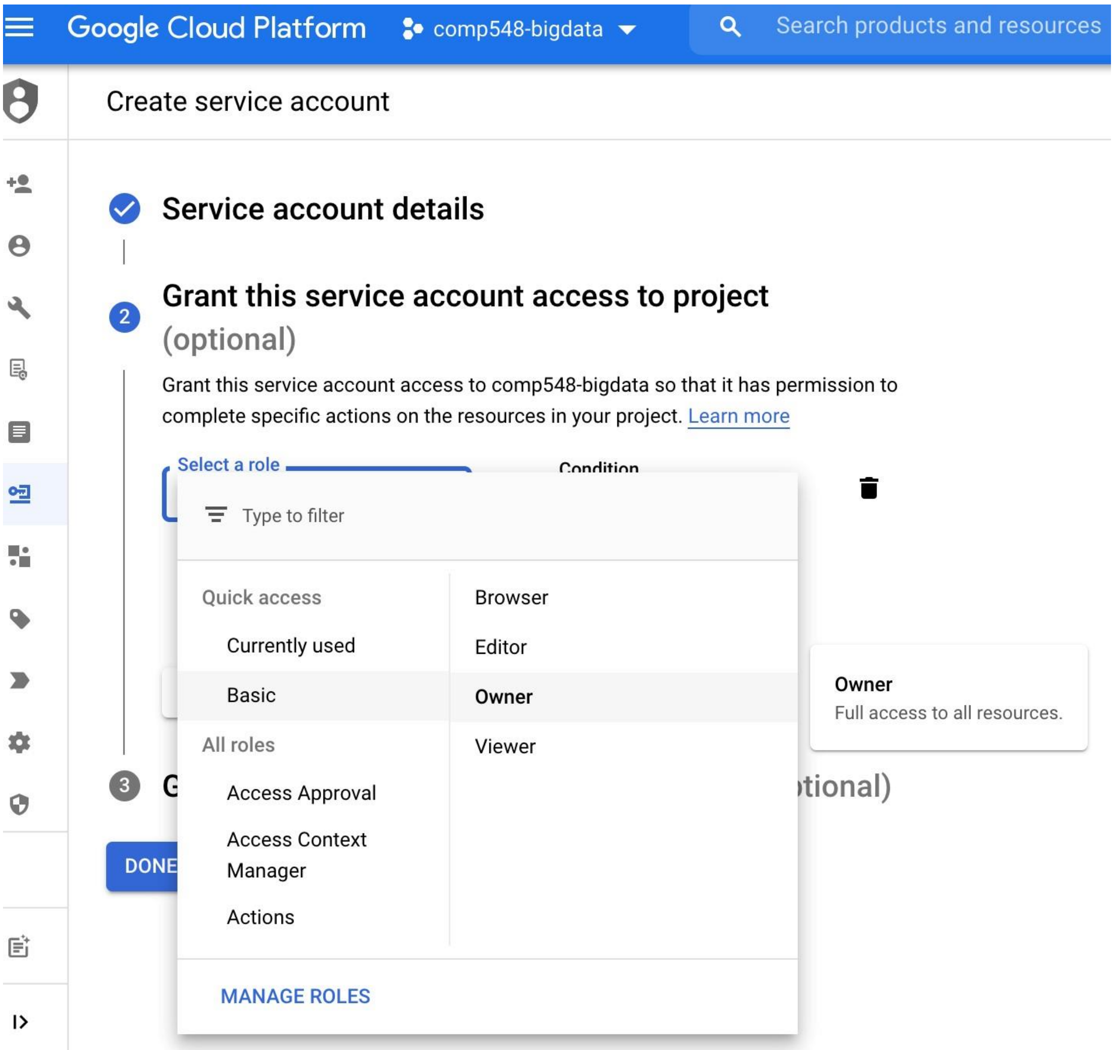
Display name for this service account

Service account ID: dtrihinas @comp548-bigdata.iam.gserviceaccount.com

Service account description

Describe what this service account will do

4. Click the *Select a role* field. Under Quick access, click **Basic**, then click **Owner**.



Create service account

Service account details

Grant this service account access to project (optional)

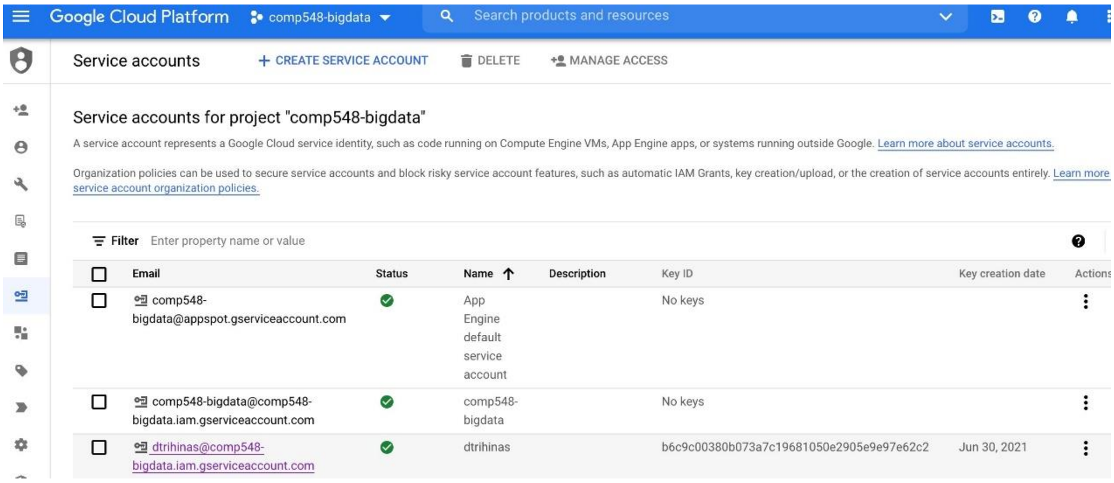
Grant this service account access to comp548-bigdata so that it has permission to complete specific actions on the resources in your project. Learn more

Owner
Full access to all resources.

5. After, click Done to finish creating the service account.

Below, we create our key – Important for the connection

6. From the service account view click on the service account you have just created.



Service accounts for project "comp548-bigdata"

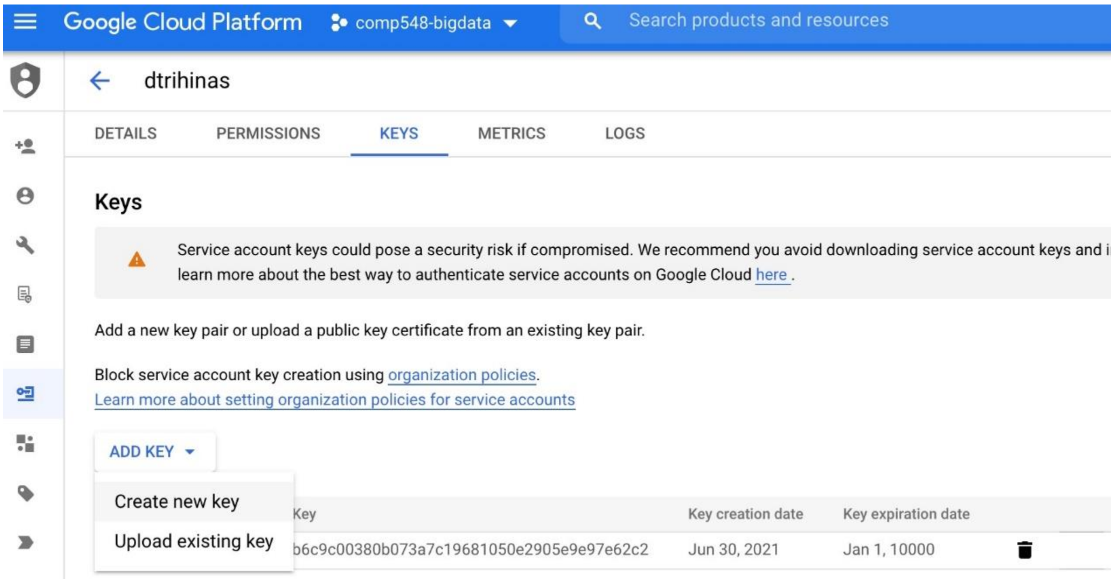
A service account represents a Google Cloud service identity, such as code running on Compute Engine VMs, App Engine apps, or systems running outside Google. Learn more about service accounts.

Organization policies can be used to secure service accounts and block risky service account features, such as automatic IAM Grants, key creation/upload, or the creation of service accounts entirely. Learn more service account organization policies.

Filter Enter property name or value

□	Email	Status	Name ↑	Description	Key ID	Key creation date	Actions
□	comp548-bigdata@appspot.gserviceaccount.com	✓	App Engine default service account		No keys		⋮
□	comp548-bigdata@comp548-bigdata.iam.gserviceaccount.com	✓	comp548-bigdata		No keys		⋮
□	dtrihinas@comp548-bigdata.iam.gserviceaccount.com	✓	dtrihinas		b6c9c00380b073a7c19681050e2905e9e97e62c2	Jun 30, 2021	⋮

7. Go to the **Keys** tab and click **ADD KEY** and then **Create Key** (if given an option, use as key type `json`). Download your key to your local environment.



Keys

Service account keys could pose a security risk if compromised. We recommend you avoid downloading service account keys and i learn more about the best way to authenticate service accounts on Google Cloud here .

Add a new key pair or upload a public key certificate from an existing key pair.

Block service account key creation using organization policies.
Learn more about setting organization policies for service accounts

Key	Key creation date	Key expiration date	
b6c9c00380b073a7c19681050e2905e9e97e62c2	Jun 30, 2021	Jan 1, 10000	🗑

Note: the below only needs to be performed once and then you can use it for as many databases as you need to associate with your google cloud project.

8. Now, that you have downloaded your key, it is time to use it in your python application/notebook through the firestore SDK. To do so, we must first set an environment variable for the current session. This is OS dependent. To avoid having to write instructions for linux, macOS, windows, android, etc in a notebook environment you may use the following:

```
%env GOOGLE_APPLICATION_CREDENTIALS=TYPE_HERE_THE_PATH_TO_YOUR_KEY
```

The line above is the first line in my Jupyter Notebook Project file. Hence, that concludes the explanation and setting-up stage, and we proceed with the ipynb file.