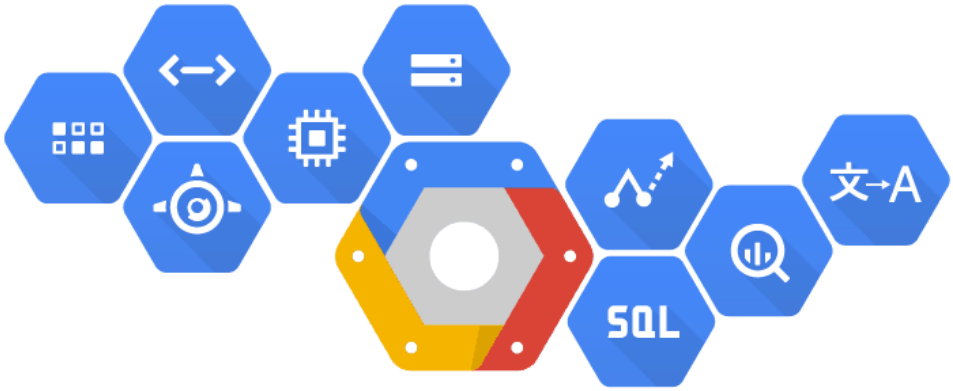

Google Cloud Platform

Cloud SQL Collector

26.05.2022

Get whatever you can imagine

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Overview

Cloud SQL Collector is a Cloud Function (1er Generation) built upon Python 3.9 which operates over Cloud SQL Admin API calls and Cloud SQL direct connection, enabling your team to gather the following Cloud SQL Instances information out-of-the-box:

Cloud SQL Admin API Calls method:

- Cloud SQL Instances details (project name, instance name, region, status)
- Databases Details (name)
- Login Details (name)

Cloud SQL direct connection method:

- Databases Details (Last update date, Size)
- Databases Tables Size

Creating and Deploying Cloud SQL Collector

This manual shows you how to create and deploy it using the Google Cloud Console.

Before you begin

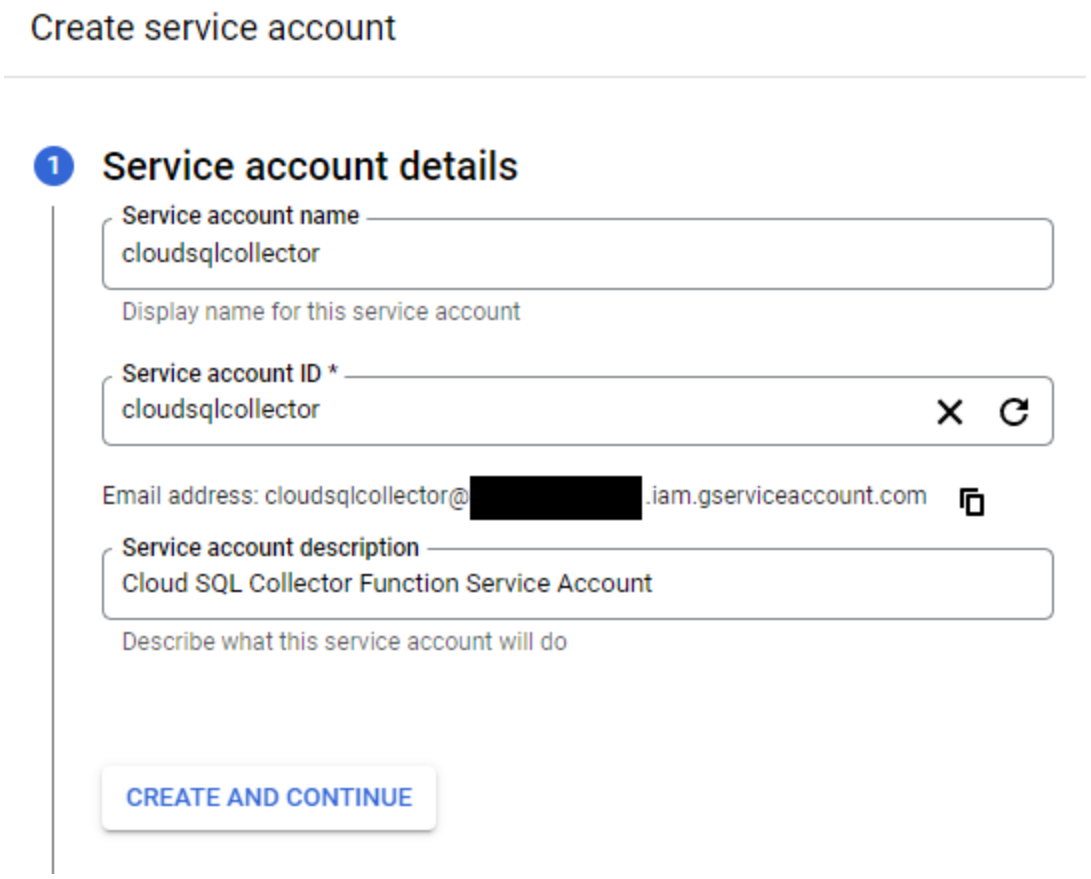
1. Sign in to the Google Cloud console using your Google Cloud account.
2. Enable the Cloud Functions, Cloud Build and Cloud SQL Admin APIs.
3. Prepare your development environment.

Get the Cloud SQL Collector code

1. Clone the GCPCloudSQLCollector repository to your local machine:
    a. git clone https://github.com/jotaccruz/GCPCloudSQLCollector.git
2. Change to the directory that contains the Cloud SQL Collector code:
    a. cd GCPCloudSQLCollector/
3. Take a look at the code.

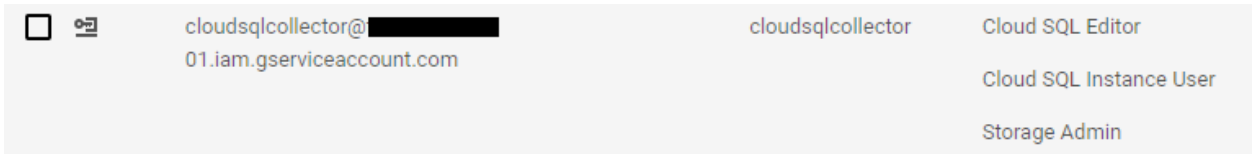
Create the Cloud SQL Collector Service Account

1. To create the service account, follow the following steps:



Leave the other options default values, Service Account created.

2. Grant IAM necessary roles to operate:



3. MySQL granting all databases, read access to the Service Account User executing the next statement.

```
GRANT SELECT ON *.* TO 'cloudsqlcollector'@'%'
```

4. MSSQL granting all databases, read access to the Service Account User executing the next statement.

```
sp_msforeachdb 'use [?]; CREATE USER [cloudsqlcollector] FOR LOGIN [cloudsqlcollector];EXEC sp_addrolemember ''db_owner'', ''cloudsqlcollector'''
```

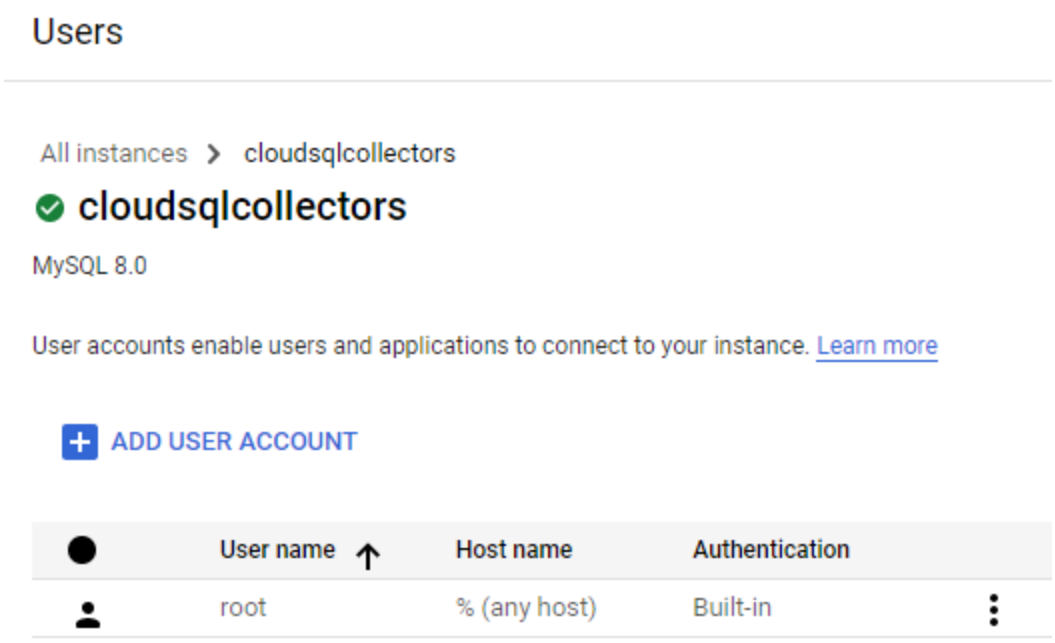
5. PostgreSQL granting all databases, read access to the Service Account User executing the next statement.

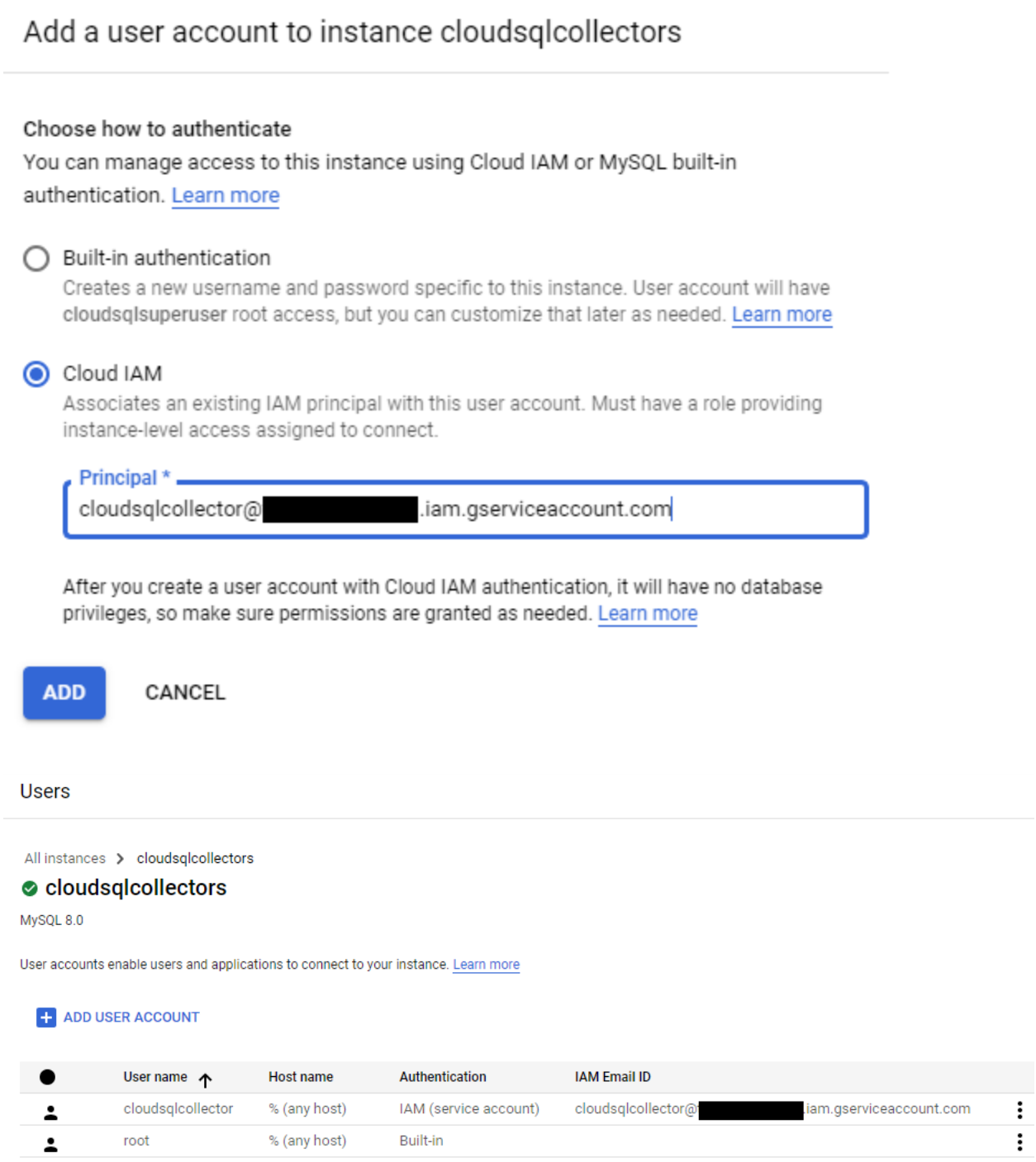
Add the IAM Service Account from the console

Create the Cloud SQL Collector Config Database

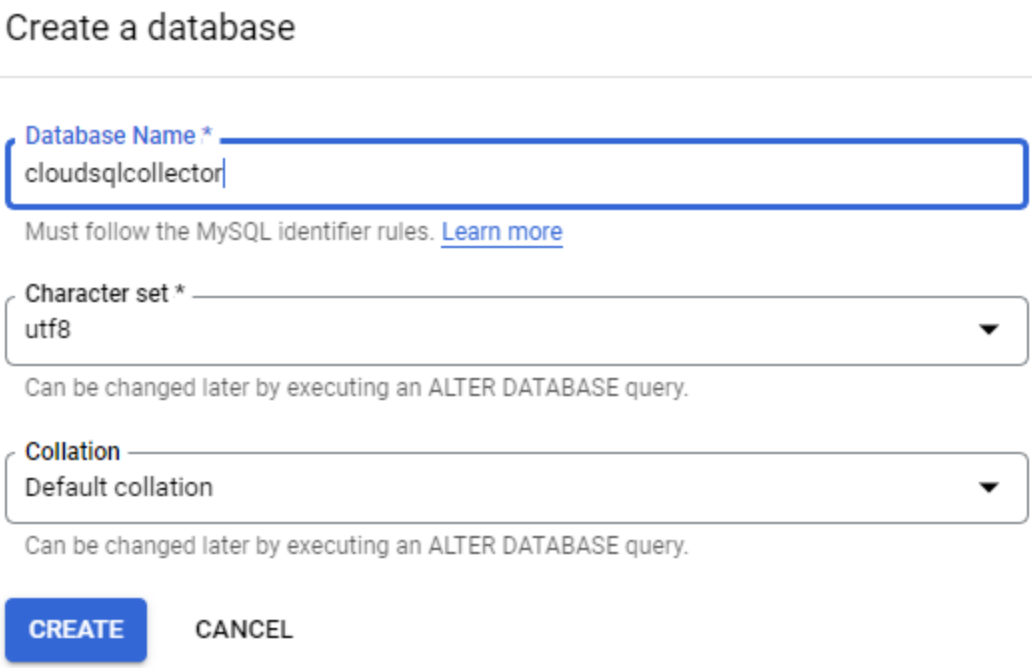
Cloud SQL Collector Function stores all its configurations in a Cloud SQL MySQL database, we need to have a Cloud SQL Instance ready to use, where this database will reside.

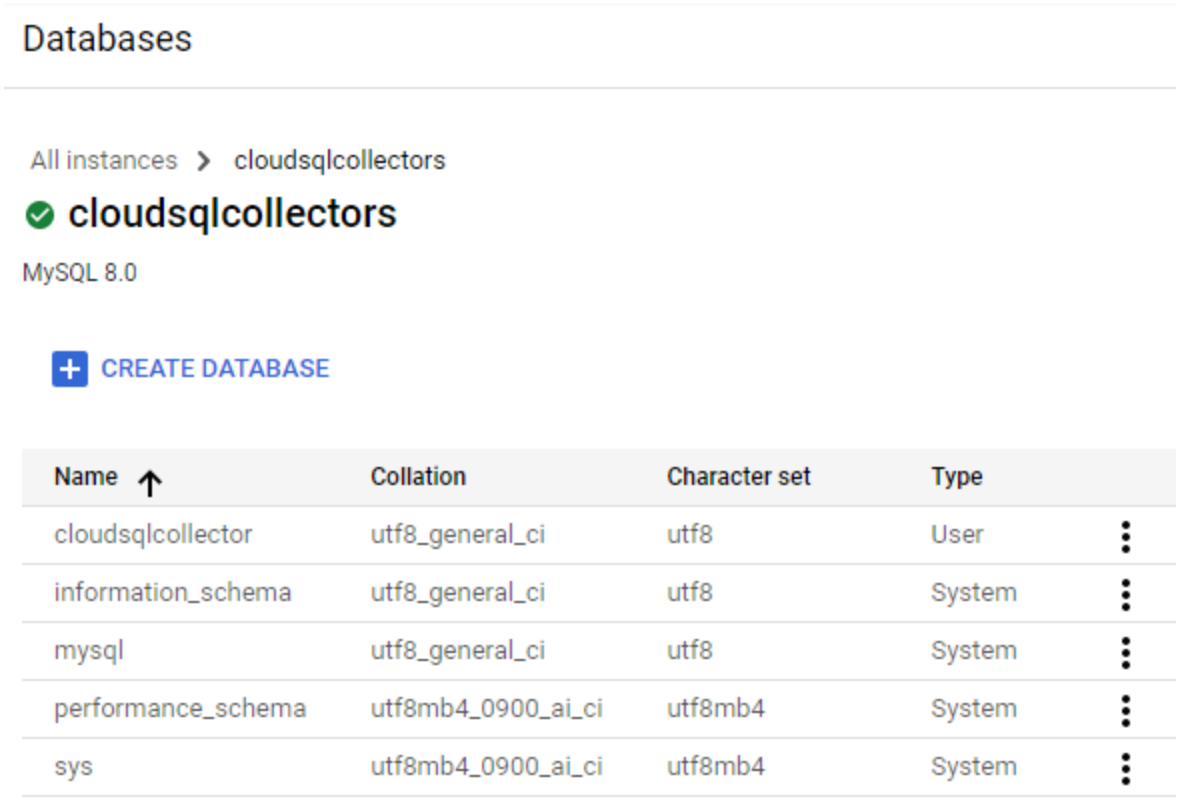
1. Adding to the Cloud SQL Instance Logins the Service Account.





2. Creating the database “cloudsqlcollector”





3. Granting cloudsqlcollector database, read/write access to the Service Account User executing the next statement.

GRANT SELECT, INSERT, UPDATE, DELETE, CREATE, DROP, REFERENCES, ALTER, EXECUTE, CREATE VIEW, SHOW VIEW ON `cloudsqlcollector`.* TO 'cloudsqlcollector'@'%'

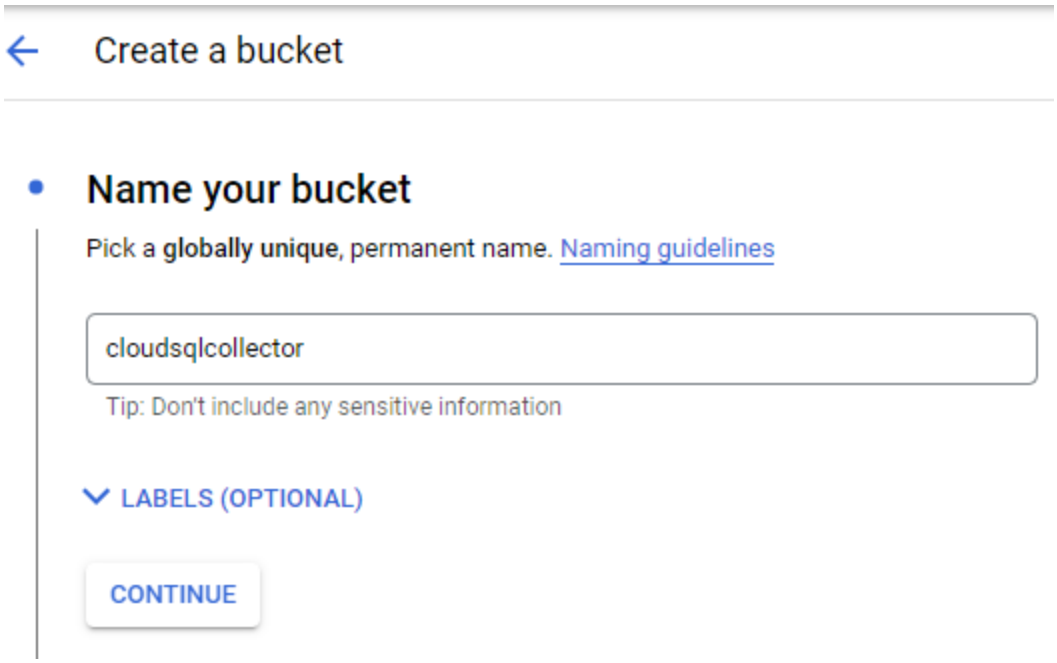
4. Setting up the initial configuration.

Run all the statements in the file init_database.sql against the database cloudsqlcollector.

Create a bucket

Cloud SQL Collector will generate csv formatted files and it will be saving them in a bucket, this is because all the gathered data is already stored in GCP metadata so you don't need to store it on your side.

1. Creating the bucket



Choose where to store your data

This permanent choice defines the geographic placement of your data and affects cost, performance, and availability. Learn more

Location type

- Multi-region
  Highest availability across largest area
- Dual-region
  High availability and low latency across 2 regions
- Region
  Lowest latency within a single region

us-west1 (Oregon)

CONTINUE

Choose a default storage class for your data

A storage class sets costs for storage, retrieval, and operations. Pick a default storage class based on how long you plan to store your data and how often it will be accessed. Learn more

- Standard
  Best for short-term storage and frequently accessed data
- Nearline
  Best for backups and data accessed less than once a month
- Coldline
  Best for disaster recovery and data accessed less than once a quarter
- Archive
  Best for long-term digital preservation of data accessed less than once a year

CONTINUE

Choose how to control access to objects

Prevent public access

Restrict data from being publicly accessible via the internet. Will prevent this bucket from being used for web hosting. Learn more

☐ Enforce public access prevention on this bucket

Access control

◉ Uniform
Ensure uniform access to all objects in the bucket by using only bucket-level permissions (IAM). This option becomes permanent after 90 days. Learn more

○ Fine-grained
Specify access to individual objects by using object-level permissions (ACLs) in addition to your bucket-level permissions (IAM). Learn more

CONTINUE

Choose how to protect object data

Your data is always protected with Cloud Storage but you can also choose from these additional data protection options to prevent data loss. Note that object versioning and retention policies cannot be used together.

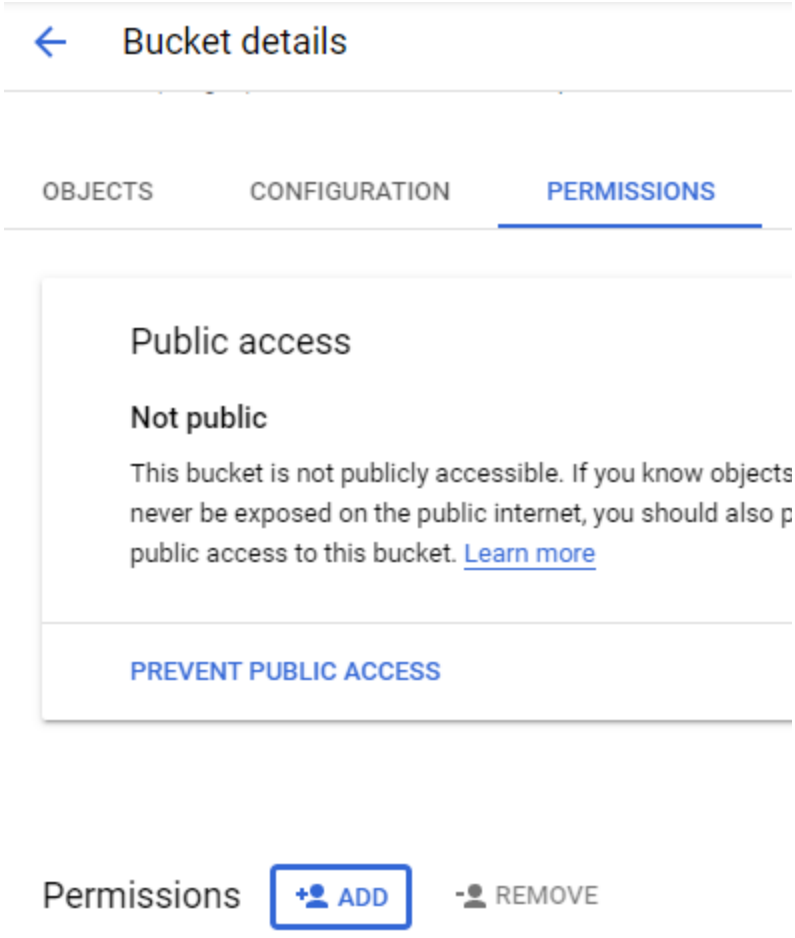
Protection tools

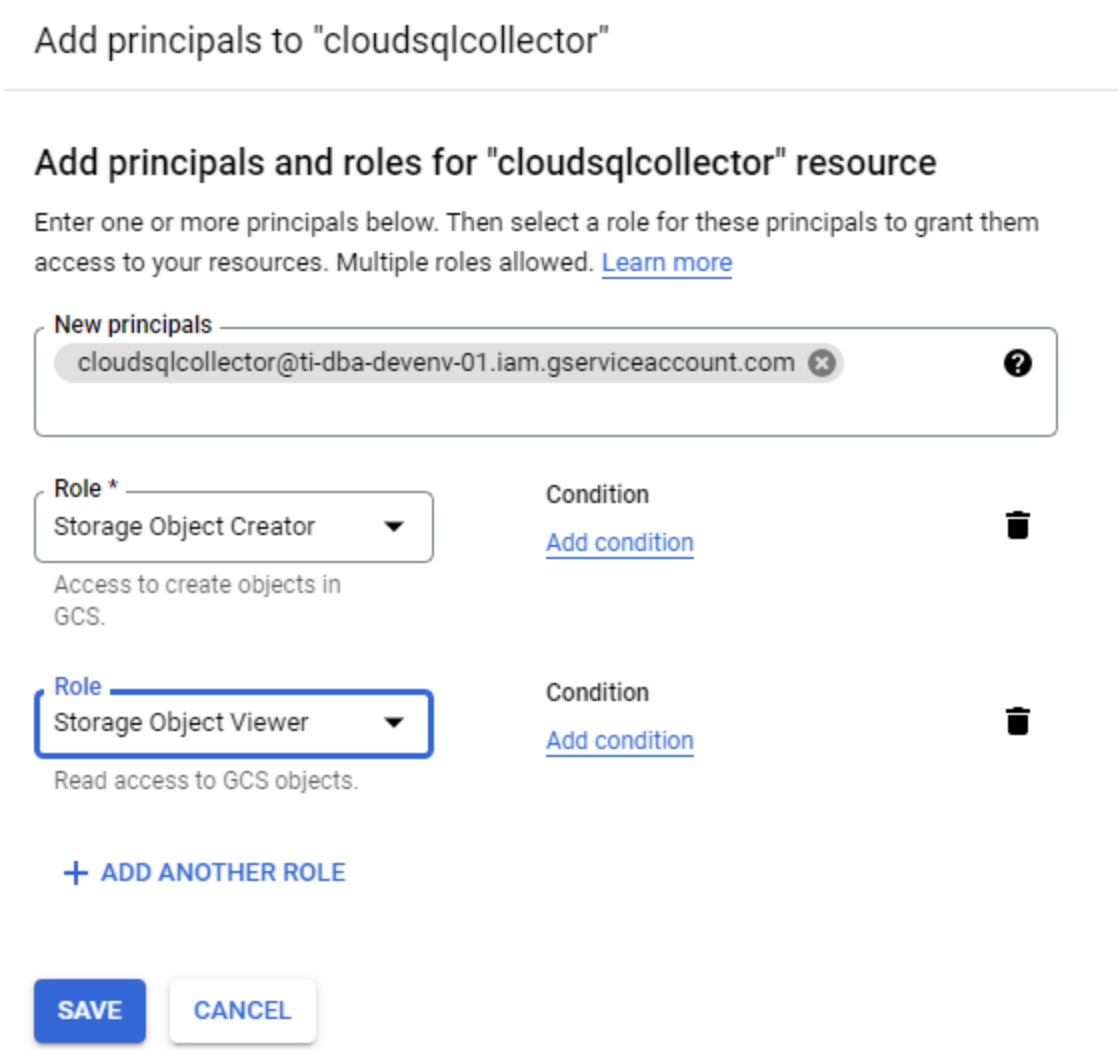
◉ None

○ Object versioning (best for data recovery)
For restoring deleted or overwritten objects. To minimize the cost of storing versions, we recommend limiting the number of noncurrent versions per object and scheduling them to expire after a number of days. Learn more

○ Retention policy (best for compliance)
For preventing the deletion or modification of the bucket's objects for a specified minimum duration of time after being uploaded. Learn more

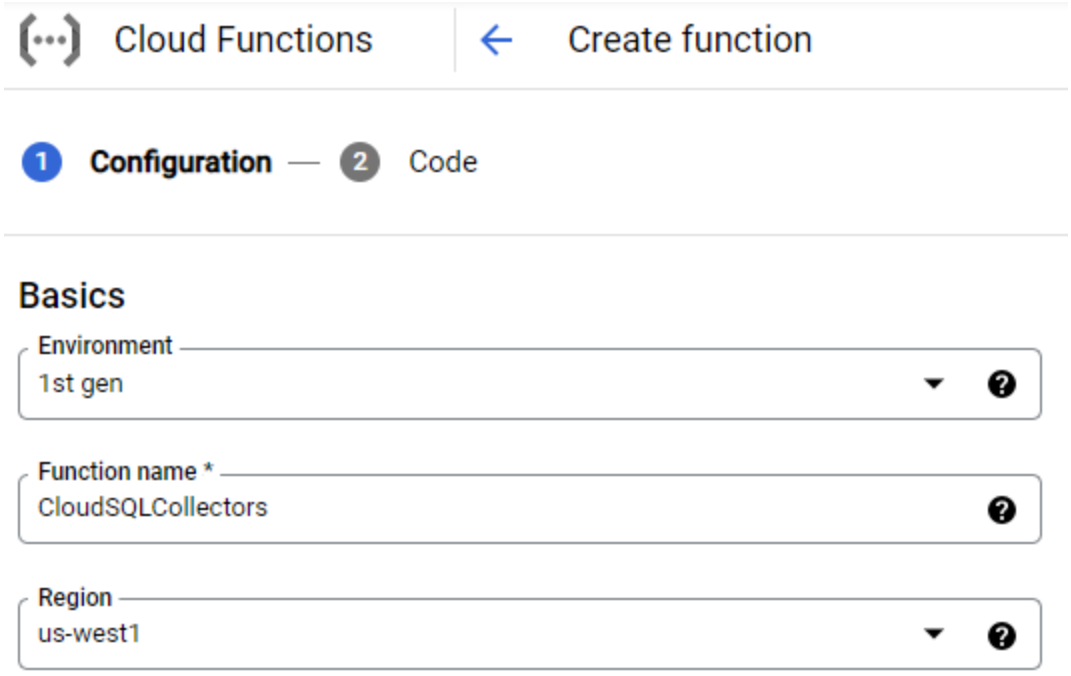
2. Adding Read/Write access to the Cloud SQL Collector Service Account


Bucket details
OBJECTS
CONFIGURATION
PERMISSIONS
Public access
Not public
This bucket is not publicly accessible. If you know objects
never be exposed on the public internet, you should also p
public access to this bucket. Learn more
PREVENT PUBLIC ACCESS
Permissions
ADD
REMOVE

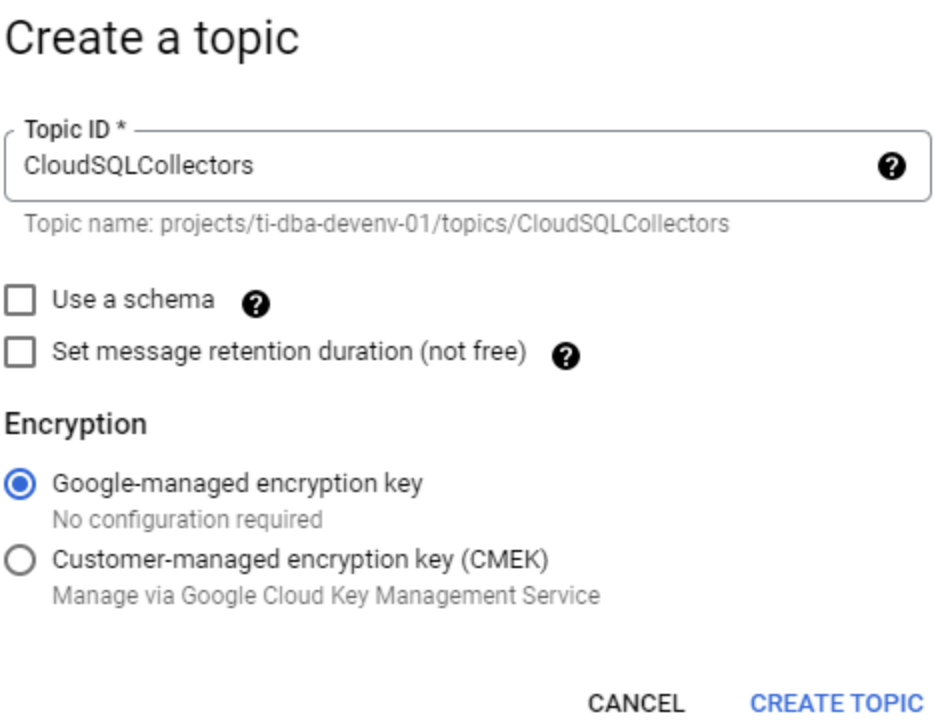


Deploy Cloud SQL Collector Function

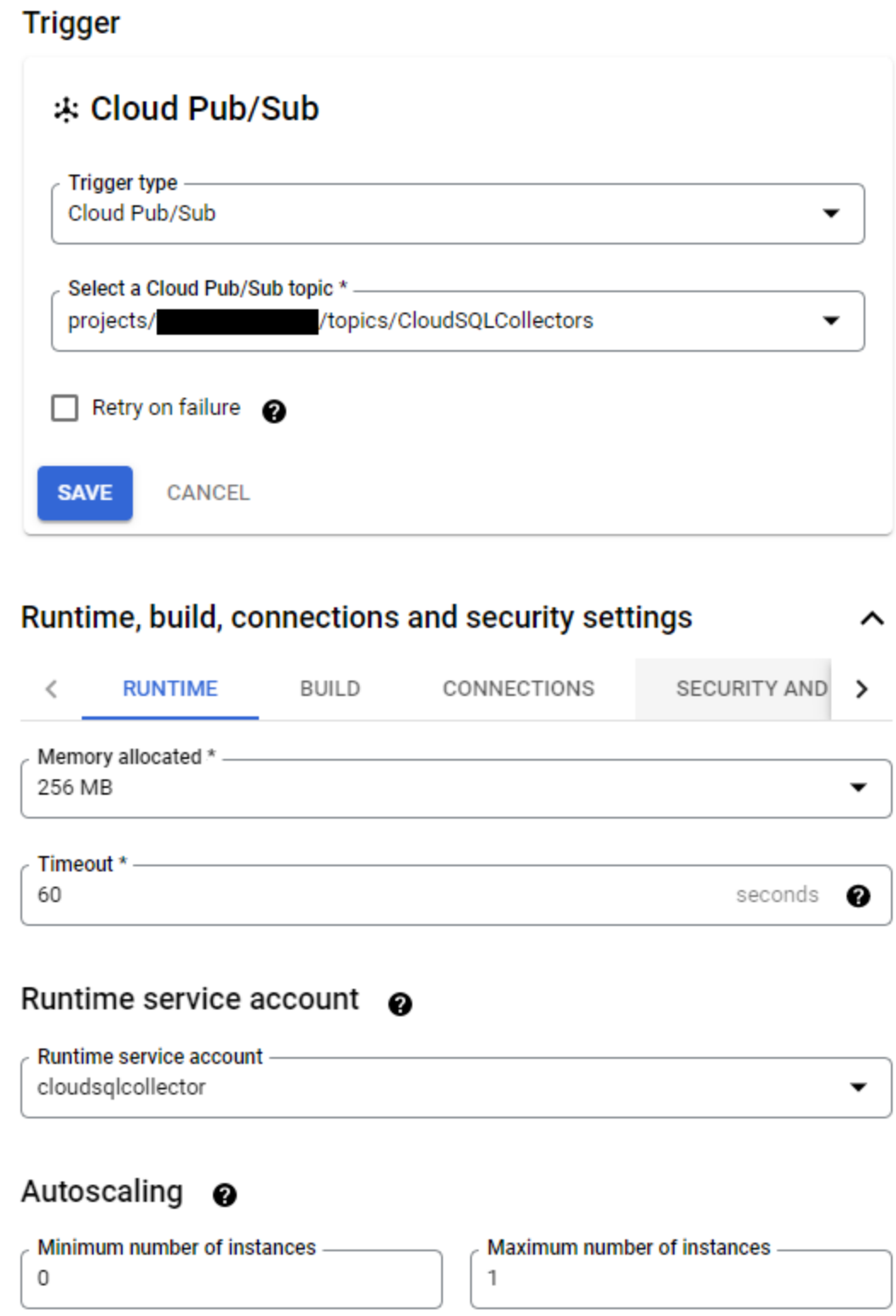
To deploy the function with the Pub/Sub method as the trigger, follow all the steps below in the Google Console:

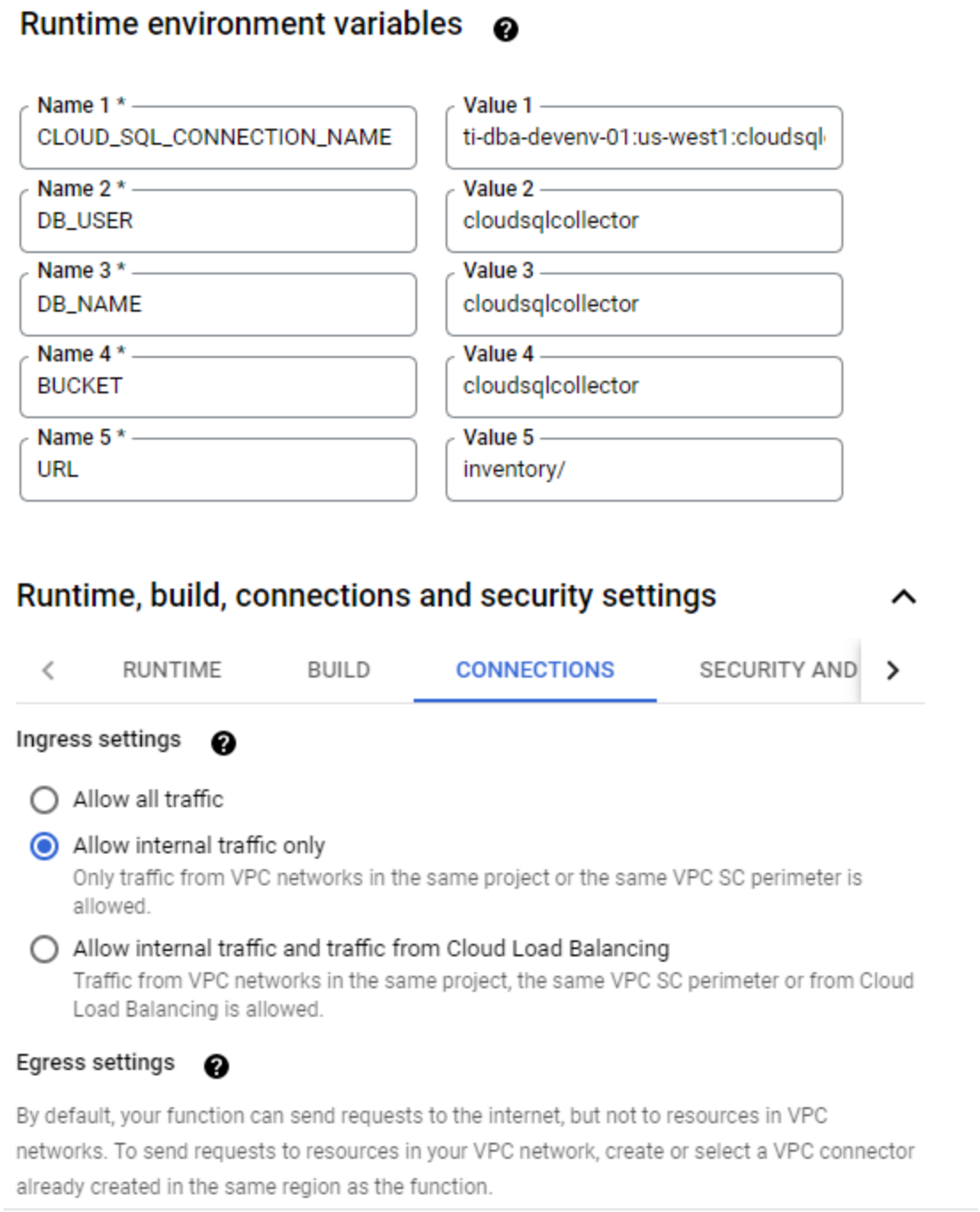


We will use Cloud Pub/Sub event to trigger the Function so we need to create a Pub/Sub Topic, select CREATE A TOPIC option:



Now that the Topic is ready, select the one you have just created





Cloud SQL Collector Function uses a Serverless VPC Connector to reach all the CloudSQL Instances in your project out, this is because Cloud Function is a Serverless Service needing to connect to a Private Services.

Create connector

Name *
cloudsqlcollectorvpcconn

Region *
us-central1

A region is a specific geographical location where you can run your resources.

- (•) Networks in this project
- ( ) Networks shared with me (from host project: [redacted])

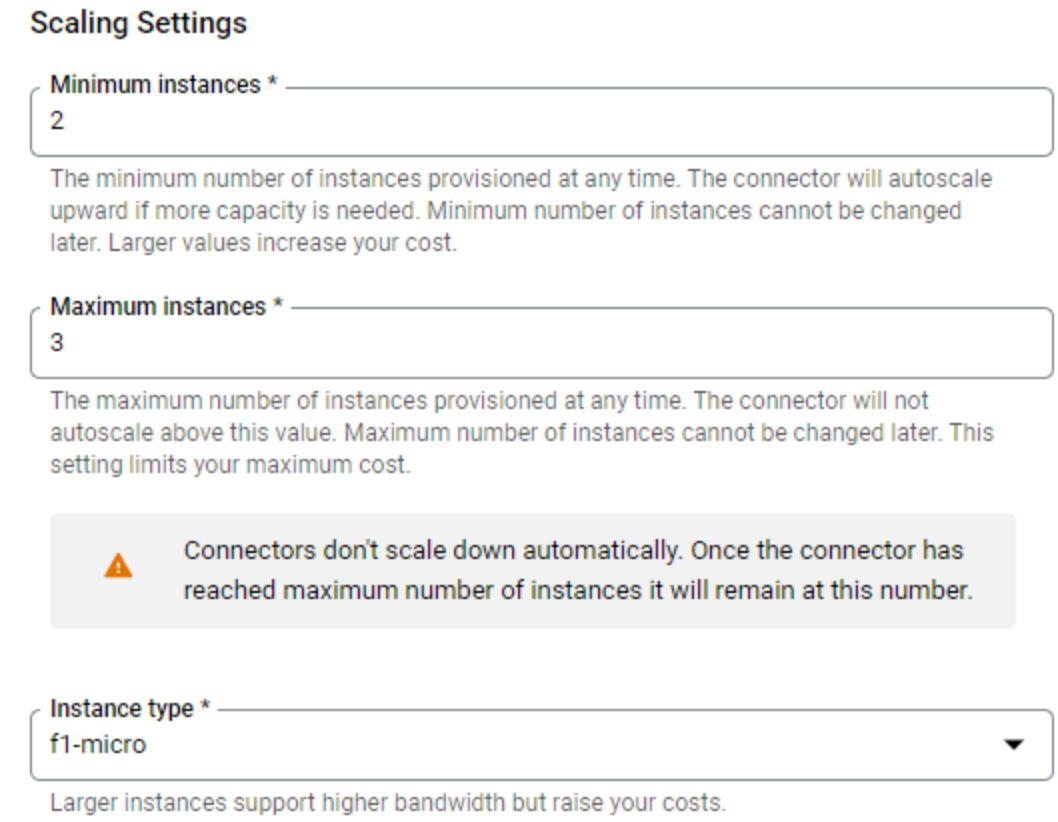
Network *
default

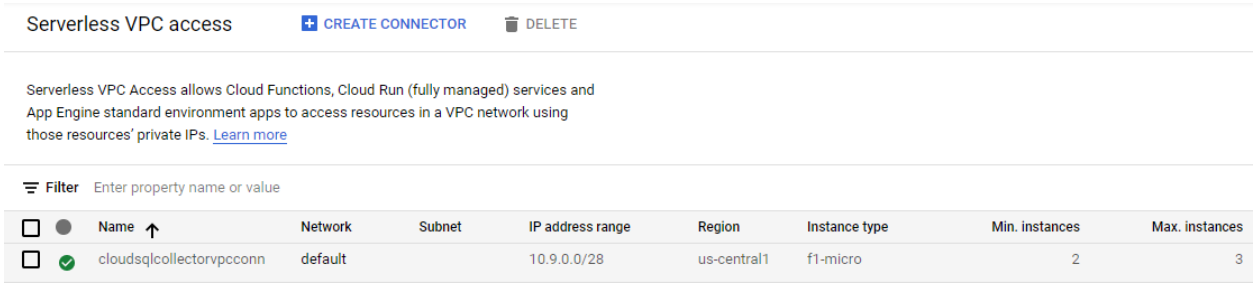
Subnet *
Custom IP range

Select an unused /28 subnet or create a new one by entering an unused /28 IP range. The VPC Connector will create connector instances on this subnet.

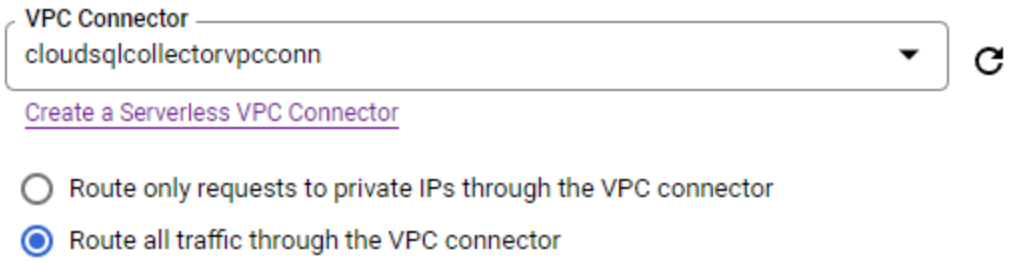
IP range *
10.9.0.0 /28

IP range must be an unused /28 CIDR range in your VPC network, such as 10.8.0.0/28. The VPC Connector will create connector instances on IP addresses in this range. Ensure the range does not overlap with an existing subnet. Learn more

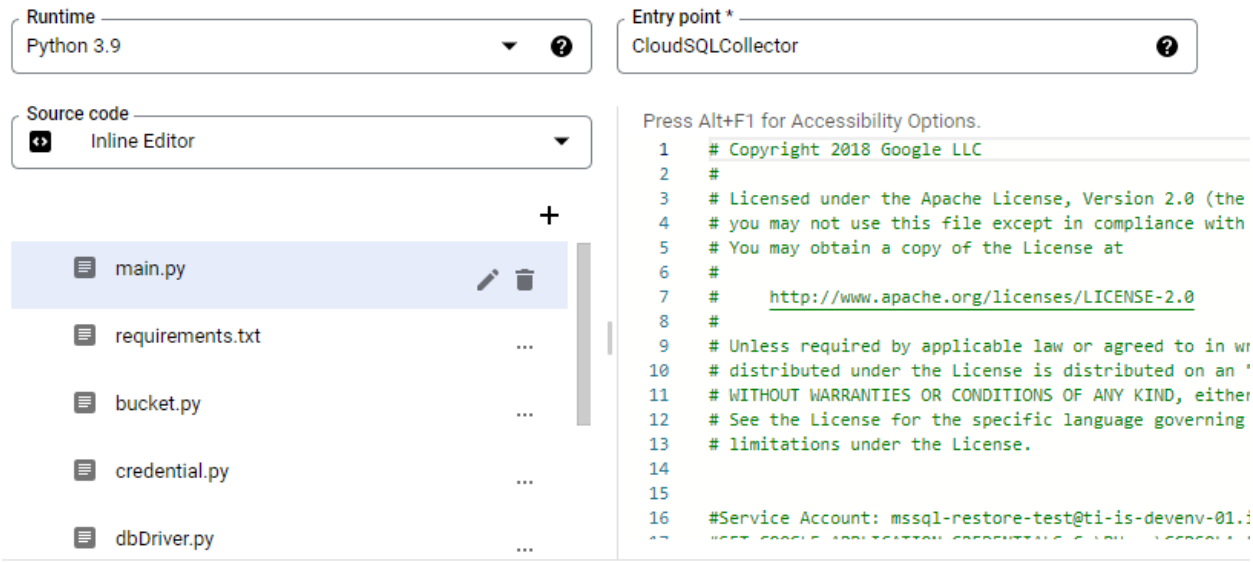




Now we are able to select the VPC Connector which will be assigned to the function.



Now we are ready to add the code:



Function Created.

To test it: