HSBC

Infosys
Navigate your next

Lab Guide for Database Services in GCP

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Context

This document contains assignments to be completed as part of the hands on session for the course

Guidelines

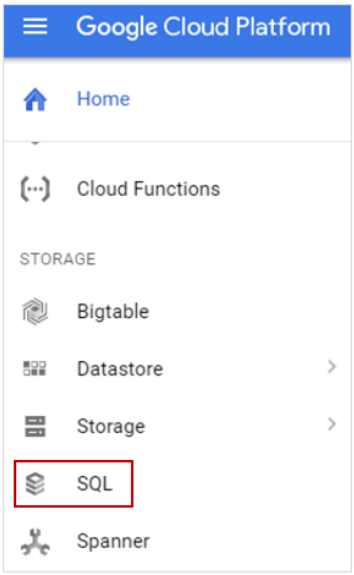
- The lab guide has been designed to give hands on experience to map the concepts learnt in the theory session with real life business oriented case studies/assignments.

Assignment 1: MySQL instance creation

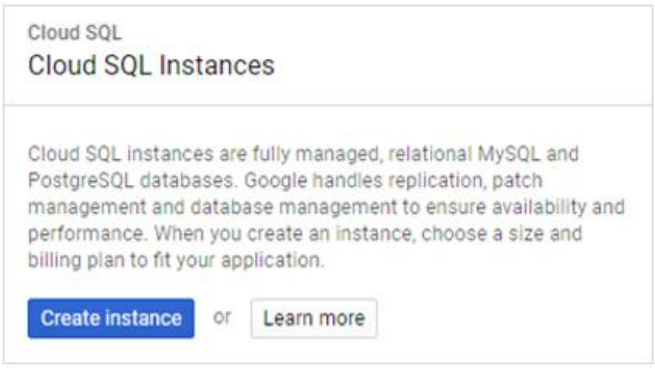
Objective: To create a SQL instance with MySQL database engine on GCP

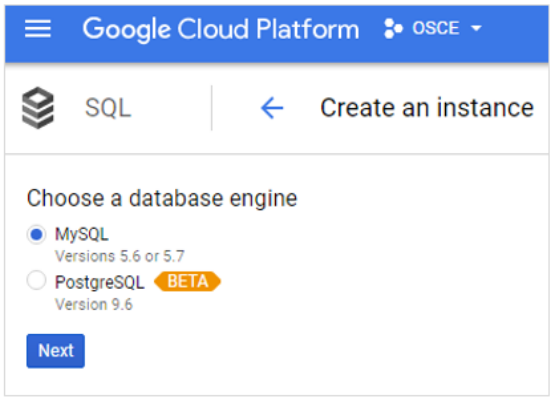
Solution:

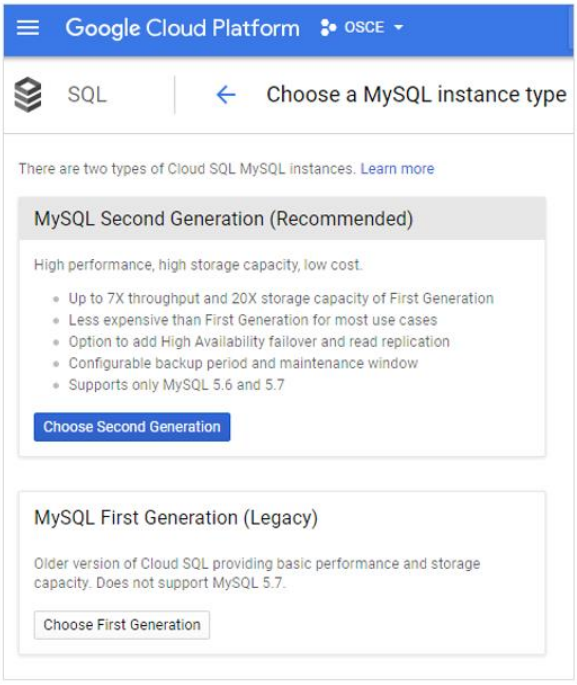
***Step** 1: To access the Cloud SQL service, choose SQL under drop down menu on the GCP management console.*



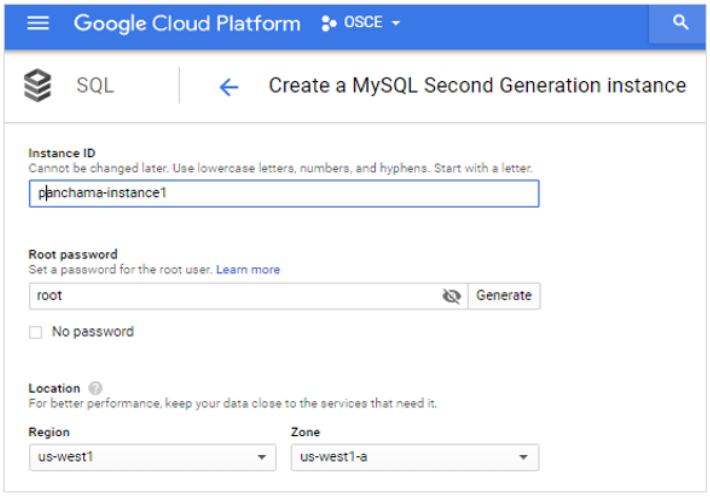
***Step** 2: In the navigation pane, click on Create instances. Select MySQL 5.7 second generation instance as shown in the below screen.*



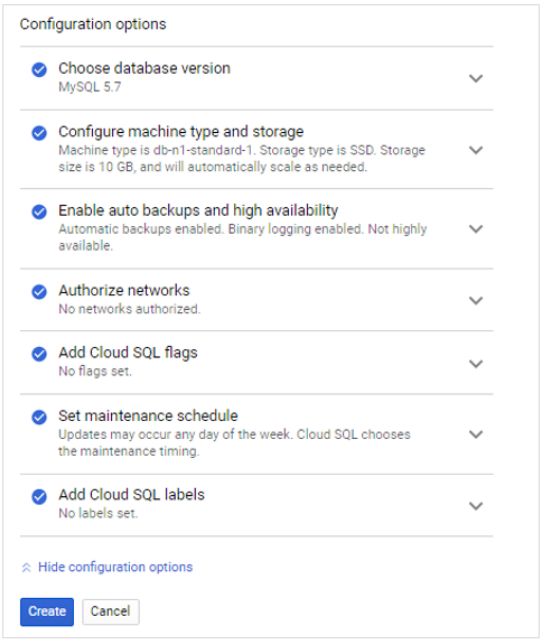




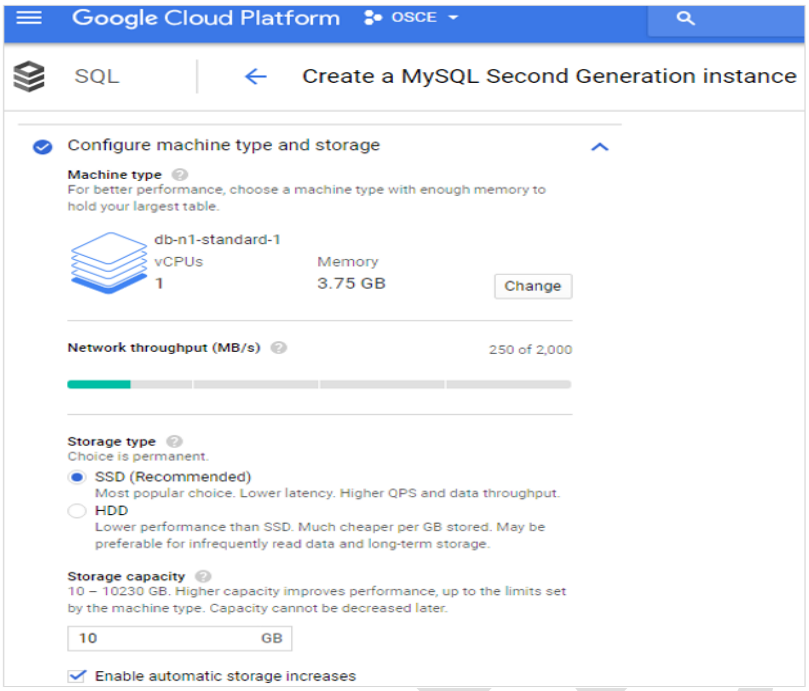
***Step 3**: Provide an appropriate instance name and set the root password. Choose your region and zone locations nearby to majority of your customers.*



Step 4: *Various options are provided to change the configuration in terms of storage, machine type, backup and maintenance window etc. Explore them.*

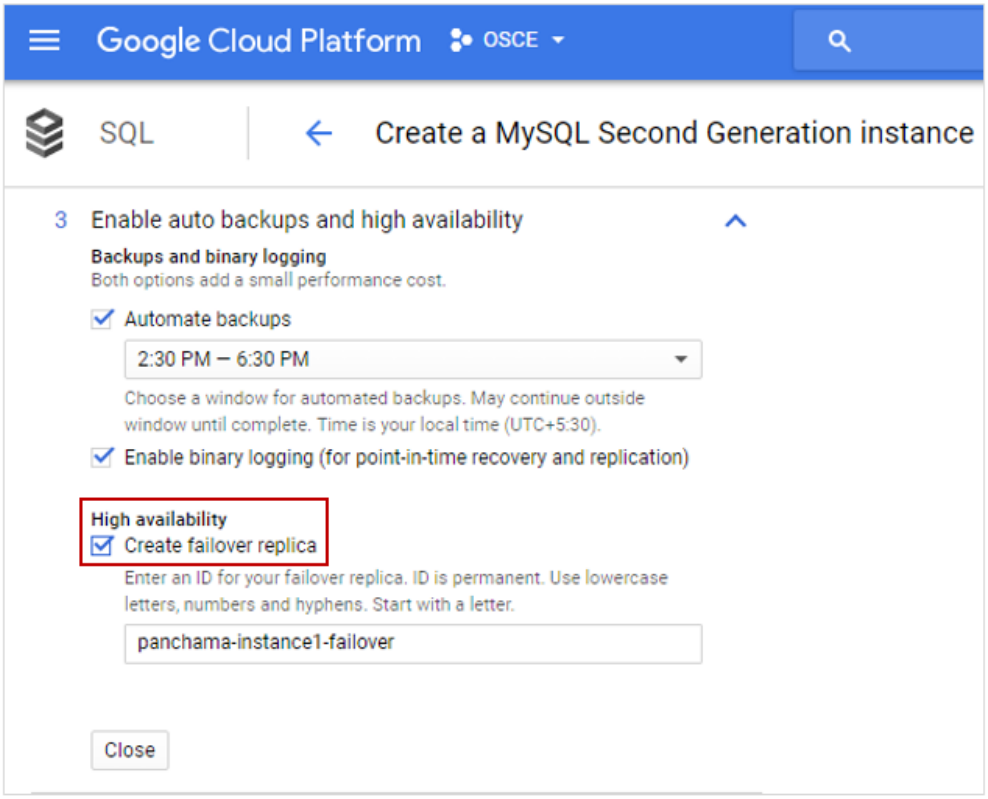


Step 5: *Select appropriate machine type and storage based on Panchama's requirements. As one of Panchama's requirement is having low latency, select SSD as storage types instead of HDDs.*

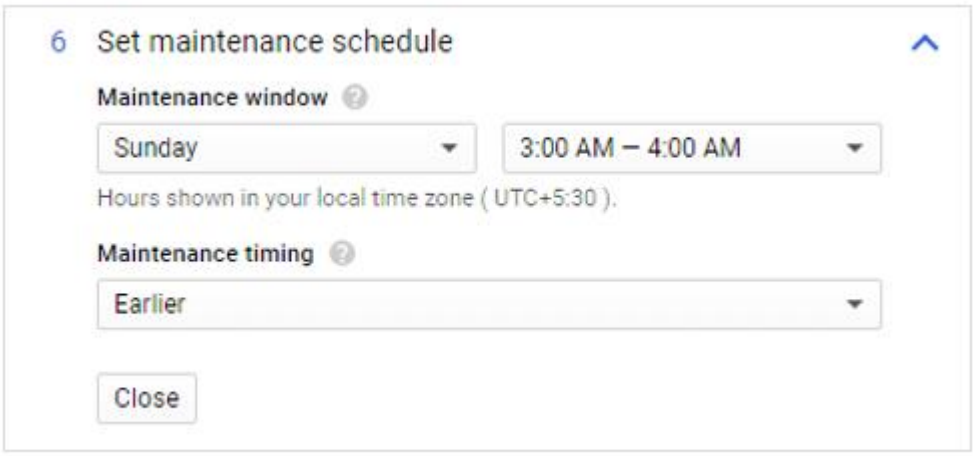


Step 6: *The power of using a fully managed service by GCP is reducing administrative task. One of them is automated backups. Choose a 4-hour window slot from the drop down. Check the 'Enable binary logging' box to ensure replication and recovery is smooth for a point in time due to some failures.*

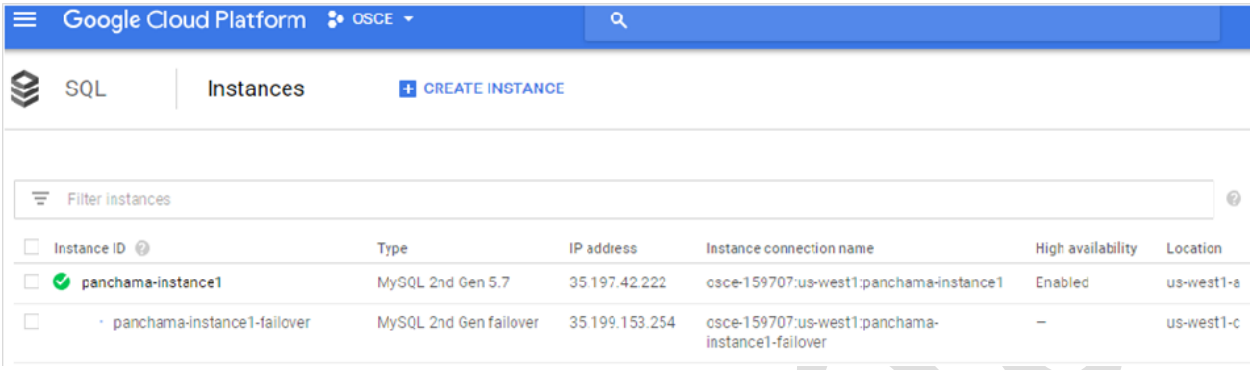
It also gives an option to create fail over replicas to make it highly available. Select the option in case of Disaster recovery plan and Multi zone deployment requirement. Usually fail over replicas takes the base instance name and appends a fail over word to ease billing process.


Google Cloud Platform
OSCE
SQL
Create a MySQL Second Generation instance
3 Enable auto backups and high availability
Backups and binary logging
Both options add a small performance cost.
Automate backups
2:30 PM – 6:30 PM
Choose a window for automated backups. May continue outside window until complete. Time is your local time (UTC+5:30).
Enable binary logging (for point-in-time recovery and replication)
High availability
Create failover replica
Enter an ID for your failover replica. ID is permanent. Use lowercase letters, numbers and hyphens. Start with a letter.
panchama-instance1-failover
Close

Step 7: *Select an appropriate 1-hour maintenance window according to project needs. Or leave it with any to allow GCP to choose the same. Earlier in the drop down gets updates for test instance on new version before even getting updates for production instances.*



Step 8: *It takes a couple of mins and both master database instance and fail over instance will be up. Observe the fail over instance being deployed in a different zone other than the master.*



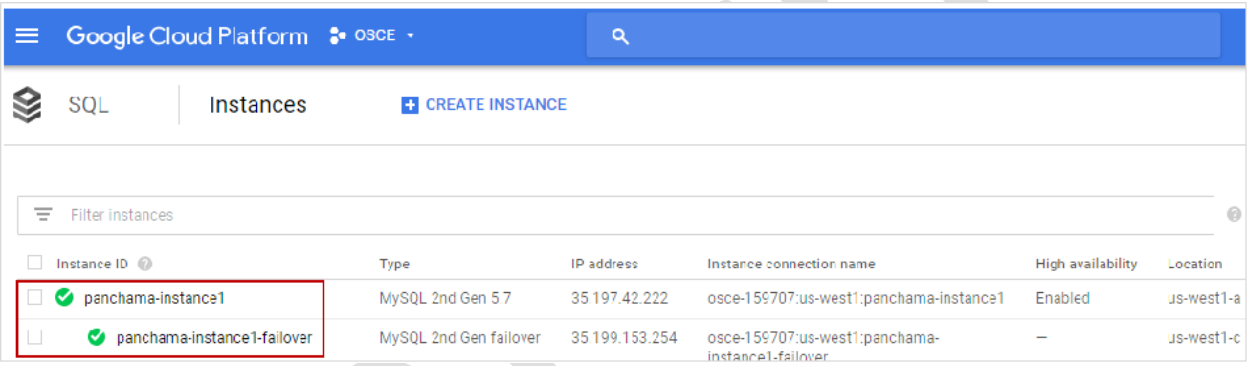
Summary of this assignment: *In this assignment, you have learnt to create a MySQL instance in GCP.*

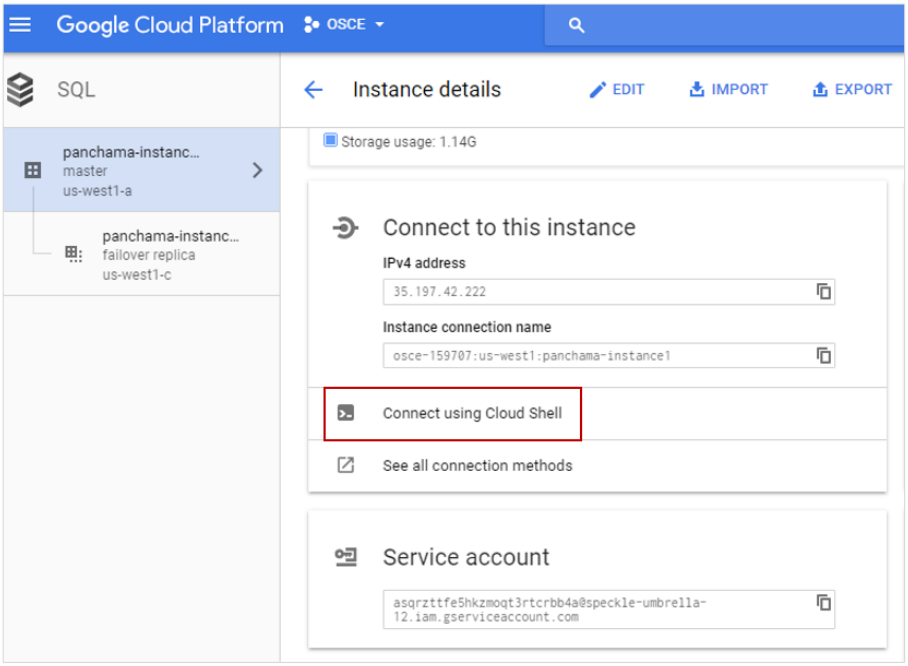
Assignment 2: Interact with MySQL instance through GCP

Objective: To connect, load, and interact with MySQL instance

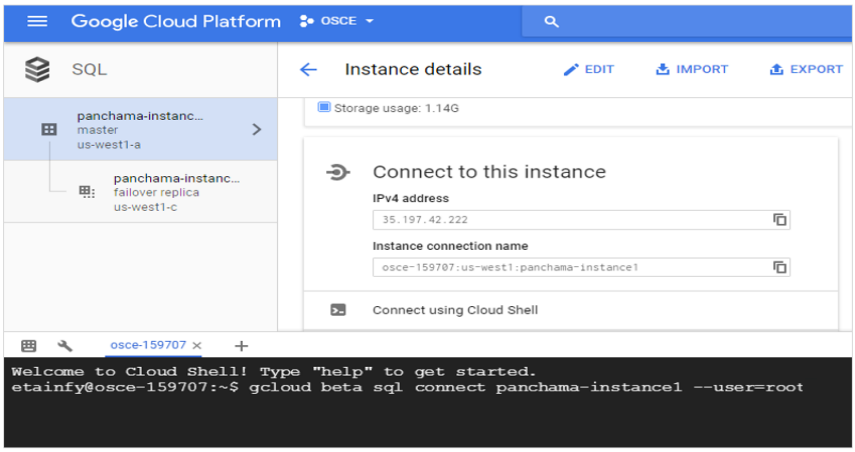
Solution:

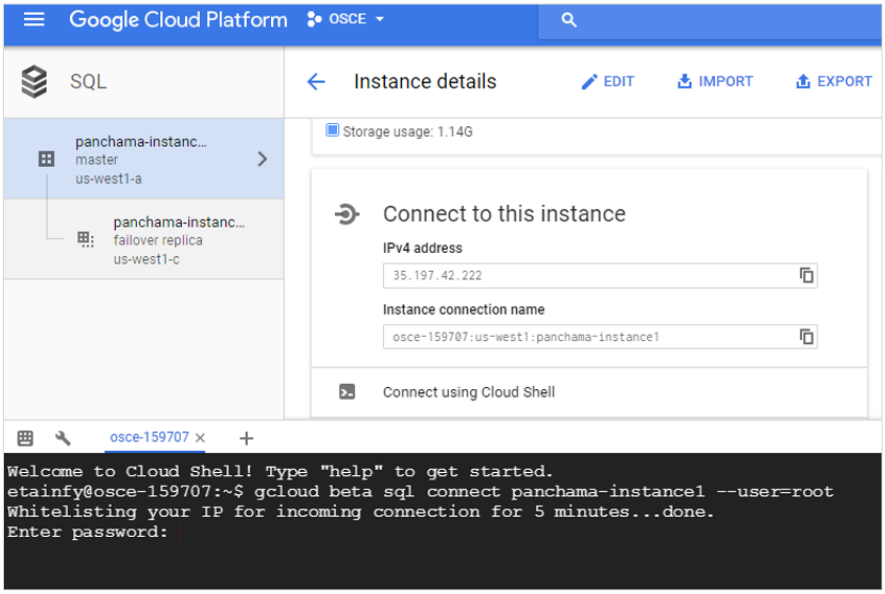
Step 1: *Select the main instance that is running and click on Connect using Cloud Shell option. This will open up a cloud shell with the command to connect auto typed*



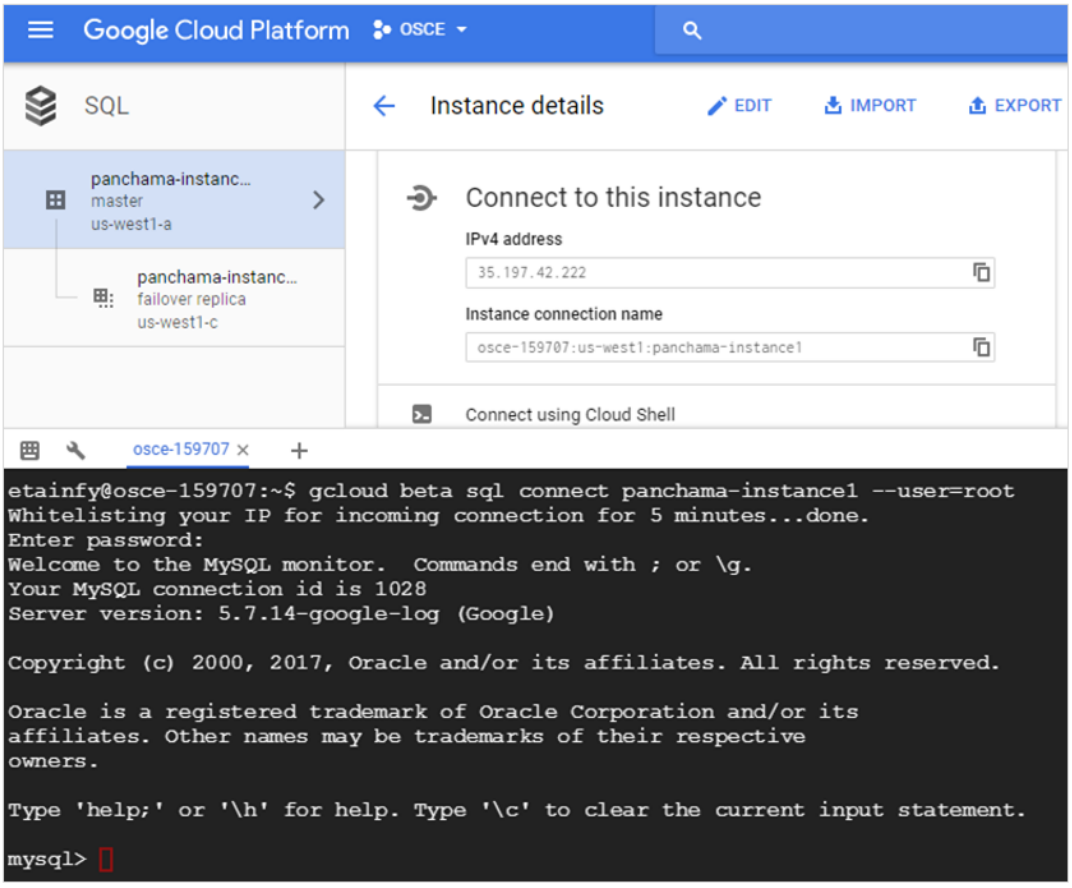


Step 2: *It will whitelist the IP for incoming connection and prompt to provide the root password. Provide the same to enter MySQL prompt*


Google Cloud Platform
OSCE
SQL
Instance details
EDIT
IMPORT
EXPORT
panchama-instanc...
master
us-west1-a
panchama-instanc...
failover replica
us-west1-c
Storage usage: 1.14G
Connect to this instance
IPv4 address
35.197.42.222
Instance connection name
osce-159707:us-west1:panchama-instance1
Connect using Cloud Shell
osce-159707
Welcome to Cloud Shell! Type "help" to get started.
etainfy@osce-159707:~$ gcloud beta sql connect panchama-instance1 --user=root


Google Cloud Platform
OSCE
SQL
Instance details
EDIT
IMPORT
EXPORT
panchama-instanc...
master
us-west1-a
panchama-instanc...
failover replica
us-west1-c
Storage usage: 1.14G
Connect to this instance
IPv4 address
35.197.42.222
Instance connection name
osce-159707:us-west1:panchama-instance1
Connect using Cloud Shell
osce-159707
Welcome to Cloud Shell! Type "help" to get started.
etainfy@osce-159707:~$ gcloud beta sql connect panchama-instance1 --user=root
Whitelisting your IP for incoming connection for 5 minutes...done.
Enter password:

***Step 3**: MySQL prompt shows that the connection is successful and let us now interact with the DB by loading data and querying the same. Create a database & use it for any interactions. Create necessary tables and load the data.*



Step 4: *Query the tables using select statement. Querying is the same way that normal MySQL interaction happens through command prompt or MySQL workbench third party external tool. Google Cloud shell offers an easiest way to interact with the DB.*

```
mysql> CREATE DATABASE Panchama;
Query OK, 1 row affected (0.13 sec)

mysql> USE Panchama;
Database changed
mysql> CREATE TABLE customers (guestName VARCHAR(255), country VARCHAR(255),
    ->     entryID INT NOT NULL AUTO_INCREMENT, PRIMARY KEY(entryID));
Query OK, 0 rows affected (0.14 sec)

mysql>     INSERT INTO customers (guestName, country) values ("Poorvi", "India");
Query OK, 1 row affected (0.12 sec)

mysql>     INSERT INTO customers (guestName, country) values ("Samuel", "US");
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO customers (guestName, country) values ("Chao sun", "Japan");
Query OK, 1 row affected (0.13 sec)

mysql> INSERT INTO customers (guestName, country) values ("Pranav", "India");
Query OK, 1 row affected (0.13 sec)

mysql>
```

```
mysql> select * from customers;
+-----------+---------+---------+
| guestName | country | entryID |
+-----------+---------+---------+
| Poorvi    | India   |       1 |
| Samuel    | US      |       2 |
| Chao sun  | Japan   |       3 |
| Pranav    | India   |       4 |
+-----------+---------+---------+
4 rows in set (0.12 sec)

mysql>
```

Summary of this assignment: *In this assignment, you have learnt to interact with MySQL instance in GCP.*

Additional Assignments:

1) *Datastore: Qwik Start*
2) *BigQuery: Qwik Start - Command Line*
3) *Using BigQuery in the GCP Console*
4) *Exploring Your Ecommerce Dataset with SQL in Google BigQuery*