Experiment-06

Cloud SQL for MySQL: Discover how Google Cloud SQL for MySQL provide automated management and high availability for MySQL databases?

Set Up Cloud SQL for MySQL

Step 1: Enable Cloud SQL API

1. Open Google Cloud Console.
2. Go to APIs & Services → Library.
3. Search for Cloud SQL Admin API and click Enable.

Step 2: Create a Cloud SQL for MySQL Instance

1. Go to Navigation Menu (☰) → SQL.
2. Click Create Instance → Choose MySQL.
3. Set:
   - Instance ID (e.g., my-mysql-instance)
   - Password (for root user)
   - Region & Zone (choose near your app)
   - Machine Type (choose appropriate CPU & RAM)
   - Storage Capacity (set auto-increase if needed)
4. Click Create and wait for the instance to initialize.

Step 3: Connect to Cloud SQL

Using Cloud Console

1. Open SQL → Click on your instance.
2. Under Connections, find Public IP or Private IP.
3. Use the Cloud SQL Auth Proxy or MySQL client to connect.

Using MySQL Client

```
gcloud sql connect my-mysql-instance --user=root
```

or

```
mysql -u root -p -h [INSTANCE_IP]
```

Replace [INSTANCE_IP] with the actual instance IP.

Using Django/Flask

```
DATABASES = {

'default': {

'ENGINE': 'django.db.backends.mysql',

'NAME': 'your-db-name',

'USER': 'root',

'PASSWORD': 'your-password',

'HOST': '/cloudsql/your-project-id:your-region:your-instance',

'PORT': '3306',
}
}
```

Step 4: Enable High Availability (HA) (Optional)

1. Open your instance → Click Edit.
2. Enable High Availability and select a standby zone.
3. Save changes.

Step 5: Create a Read Replica (Optional)

1. Open your instance → Click Create Read Replica.
2. Select the region and name.
3. Click Create.

Step 6: Backup & Restore

Enable Automated Backups

1. Open your instance → Click Backups.
2. Click Edit → Enable automatic backups.

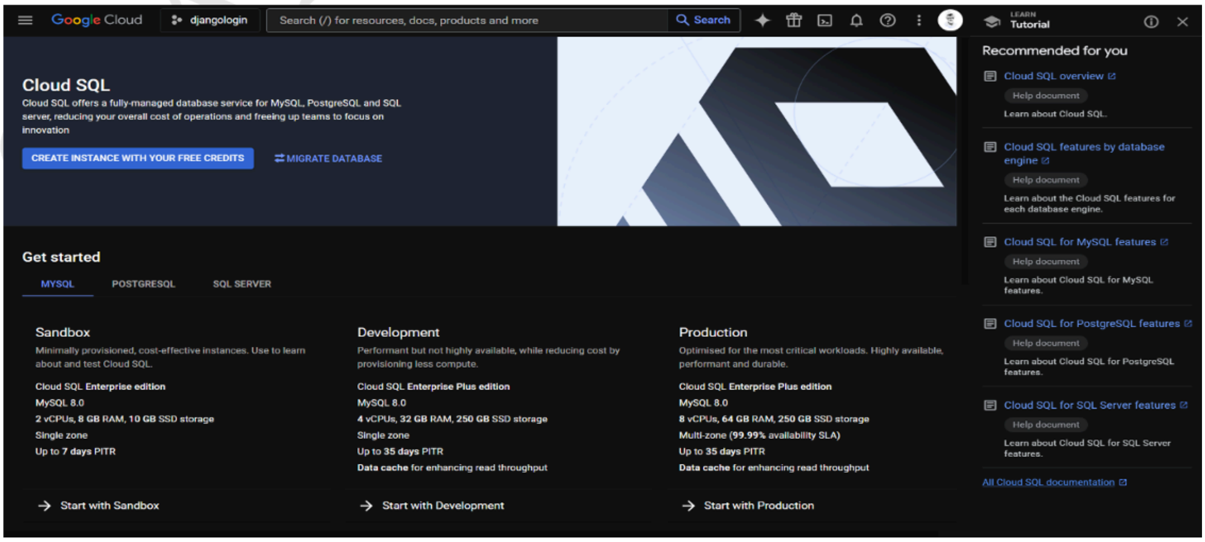
Manually Create a Backup

```
gcloud sql backups create --instance=my-mysql-instance
```

Restore from Backup

```
gcloud sql backups restore BACKUP_ID --instance=my-mysql-instance
```

Output



Cloud SQL

Cloud SQL offers a fully-managed database service for MySQL, PostgreSQL and SQL server, reducing your overall cost of operations and freeing up teams to focus on innovation

Get started

Sandbox

Minimally provisioned, cost-effective instances. Use to learn about and test Cloud SQL.

Cloud SQL Enterprise edition
MySQL 8.0
2 vCPUs, 8 GB RAM, 10 GB SSD storage
Single zone
Up to 7 days PITR

Development

Performant but not highly available, while reducing cost by provisioning less compute.

Cloud SQL Enterprise Plus edition
MySQL 8.0
4 vCPUs, 32 GB RAM, 250 GB SSD storage
Single zone
Up to 35 days PITR
Data cache for enhancing read throughput

Production

Optimised for the most critical workloads. Highly available, performant and durable.

Cloud SQL Enterprise Plus edition
MySQL 8.0
8 vCPUs, 64 GB RAM, 250 GB SSD storage
Multi-zone (99.99% availability SLA)
Up to 35 days PITR
Data cache for enhancing read throughput

Recommended for you

Cloud SQL overview
Learn about Cloud SQL.

Cloud SQL features by database engine
Learn about the Cloud SQL features for each database engine.

Cloud SQL for MySQL features
Learn about Cloud SQL for MySQL features.

Cloud SQL for PostgreSQL features
Learn about Cloud SQL for PostgreSQL features.

Cloud SQL for SQL Server features
Learn about Cloud SQL for SQL Server features.