1) Create mariadb db on ec2.

2) Insert some dummy data

3) Take the backup of dummy data on ec2

4) launch MariaDB RDS instance.

5) Migrate database from ec2 to RDS.

6) Install MySQL DB on ec2

7) Launch MySQL RDS image

8) Configure multi AZ

9) Take Backup of DB and restore the DB

10) Create Read Replica

**1) Create mariadb db on ec2.**

MARIA DB INSTALLATION

# Update system

sudo dnf update -y

# Search available MariaDB versions

sudo dnf search mariadb

# Install MariaDB server (default version in AL2023 is 10.5+)

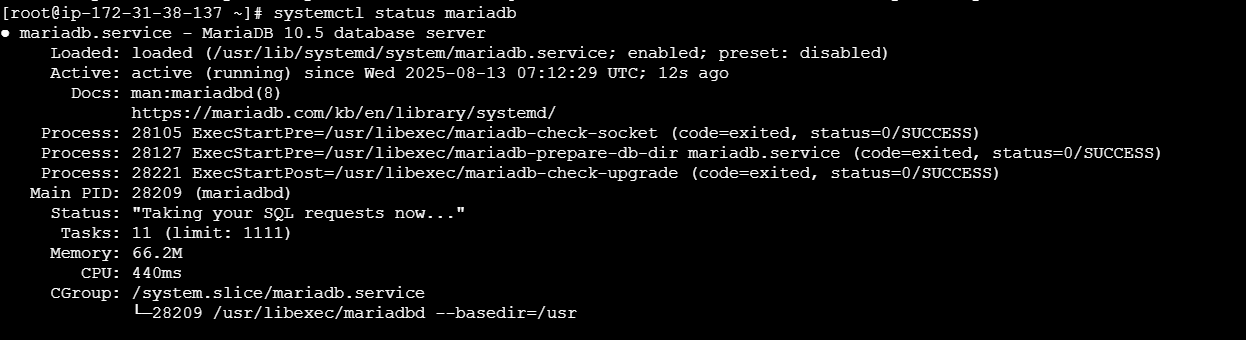
sudo dnf install -y mariadb105-server

# Enable and start MariaDB

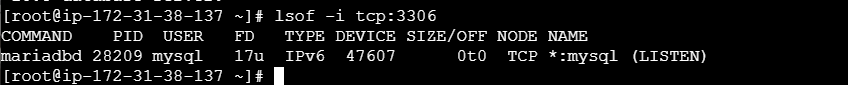
sudo systemctl enable --now mariadb

# Check status

systemctl status mariadb



Lsof -i tcp:3306



Set Environmental Variables

===========================

DBName=ec2db

DBPassword=admin123456

DBRootPassword=admin123456

DBUser=ec2dbuser

Database Setup on EC2 Instance:

===============================

echo "CREATE DATABASE ${DBName};" >> /tmp/db.setup

echo "CREATE USER '${DBUser}' IDENTIFIED BY '${DBPassword}';" >> /tmp/db.setup

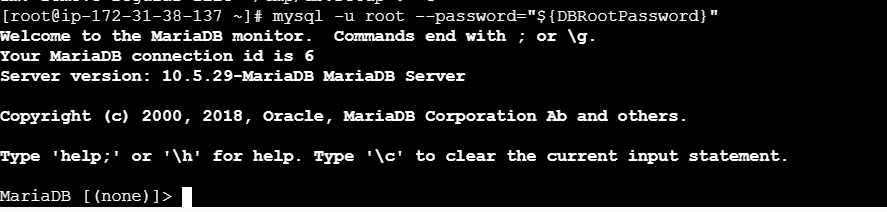
echo "GRANT ALL PRIVILEGES ON \*.\* TO '${DBUser}'@'%';" >> /tmp/db.setup

echo "FLUSH PRIVILEGES;" >> /tmp/db.setup

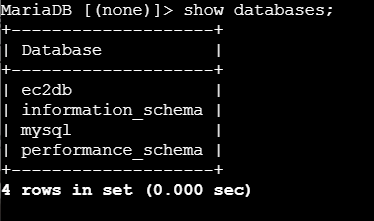
mysqladmin -u root password "${DBRootPassword}"

mysql -u root --password="${DBRootPassword}" < /tmp/db.setup

rm /tmp/db.setup



**Show databases;**

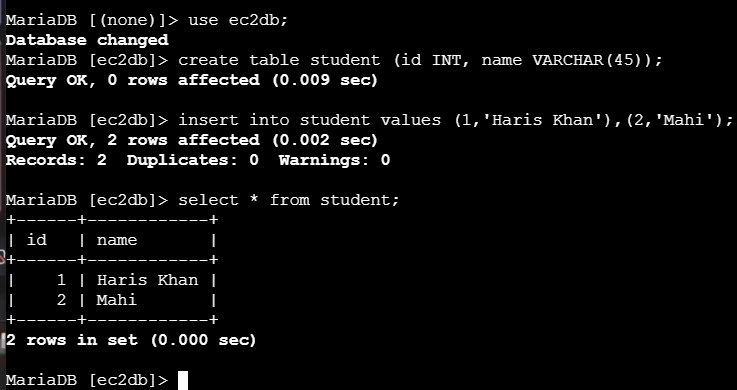


**2) Insert some dummy data**

**Switch to mysql or MariaDB**

[root@ip-172-31-38-137 ~]# mysql -u root -p

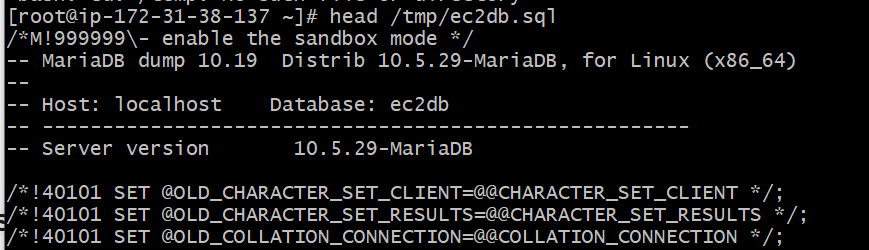
Enter password:



**3) Take the backup of dummy data on ec2**

1. Backup of ec2db → mysqldump -u root -p ec2db > /tmp/ec2db.sql

Enter password:

1. Dump file saved at /tmp/ec2db.sql
2. Checking file exist or not. ls -lh /tmp/ec2db.sql
3. 
4. View content head /tmp/ec2db.sql
5. 

**4) launch MariaDB RDS instance.**

**Open AWS Console → RDS → Databases → Create database**

**Engine options** → Choose **MariaDB**

**Version** → Choose e.g. *10.6*

**Templates** → “Free tier” or “Production”

**DB instance identifier** → e.g., mariadb-lab

**Master username** → admin  
 **Master password** → set strong password

**Instance configuration** → Choose db.t3.micro for free tier

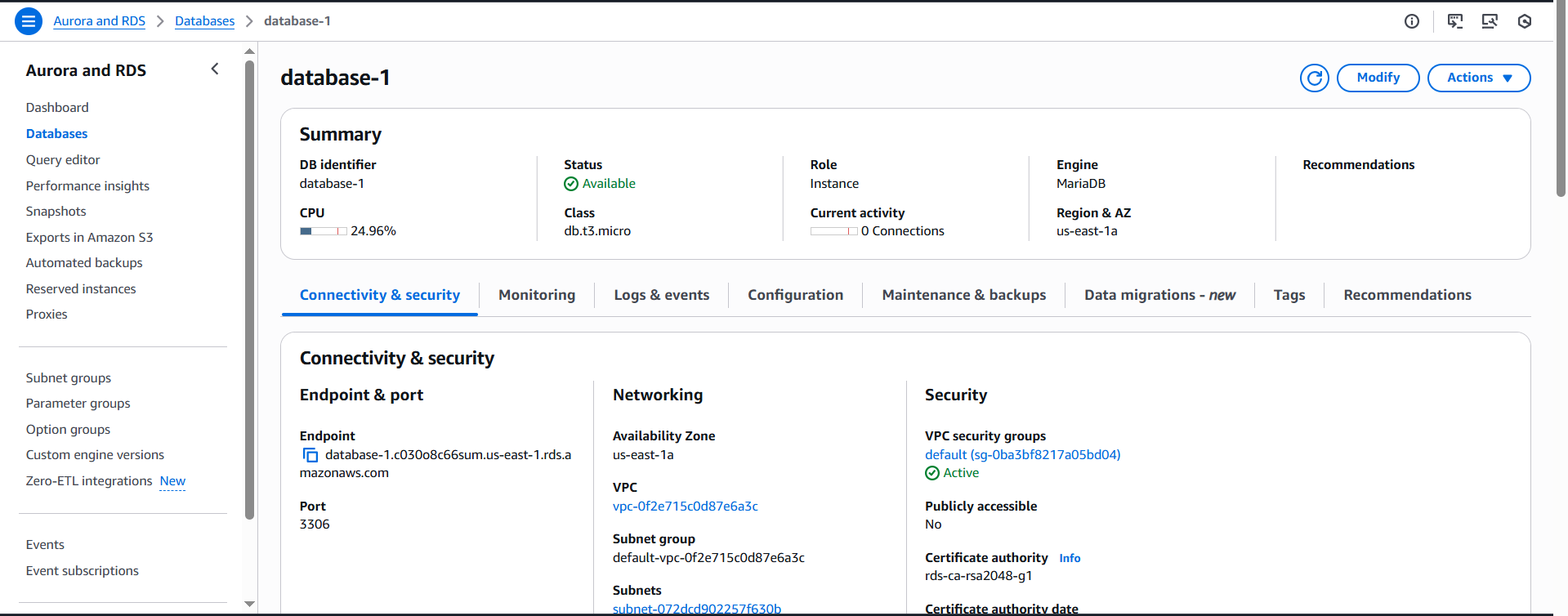
**Connectivity** →

* VPC: Choose your VPC
* Public access: No (recommended)
* Security group: Choose SG that allows port **3306** from EC2

**Database authentication** → Password authentication

**Click** *Create database*

Wait for **Status → Available**

****

**5) Migrate database from ec2 to RDS.**

1. Get the dump of your existing DB on EC2

Taking backup → mysqldump -u root -p ec2db > ec2db.sql

1. Login to maridb

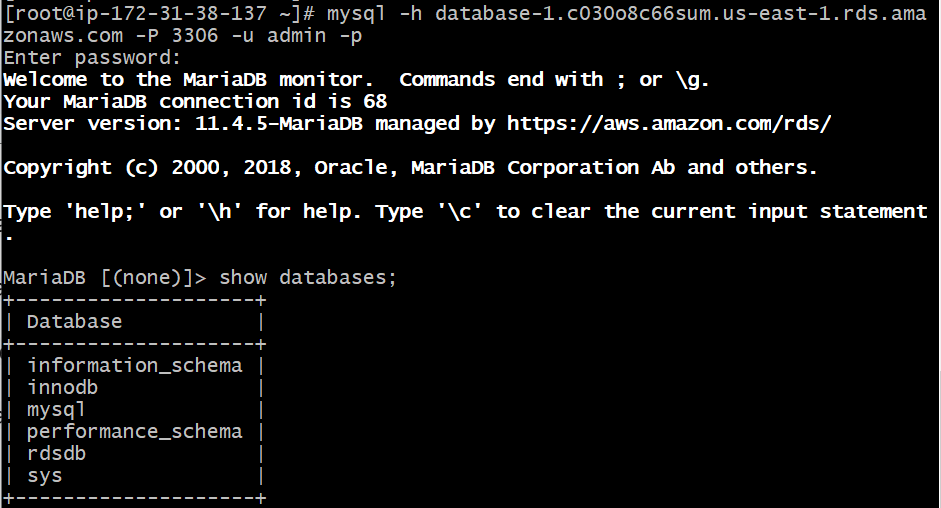
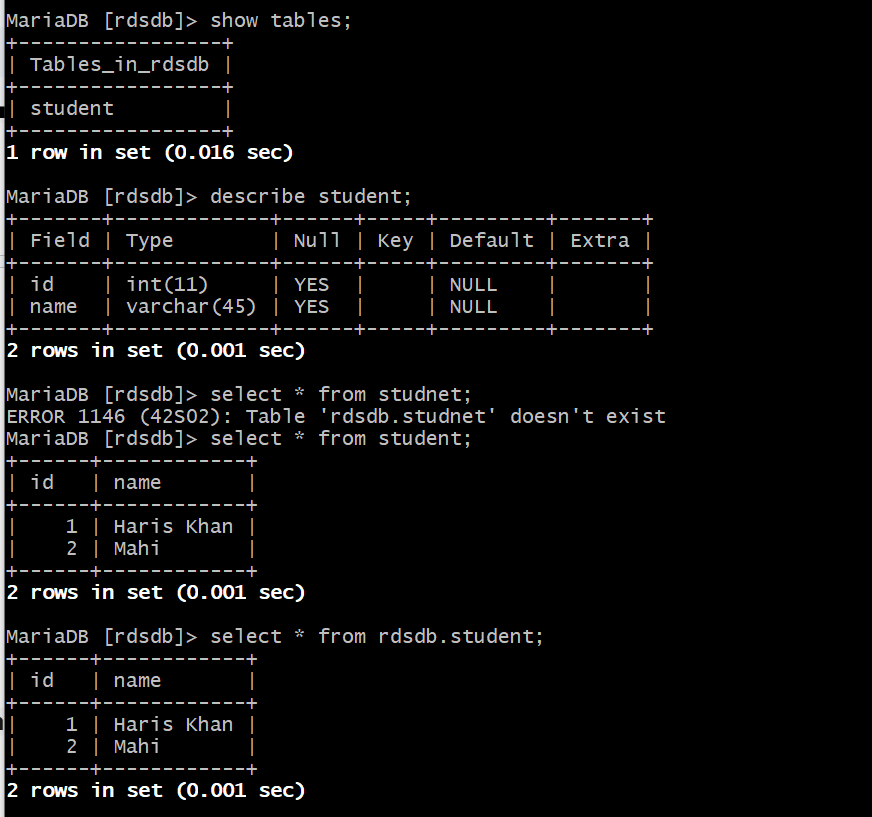
mysql -h database-1.c030o8c66sum.us-east-1.rds.amazonaws.com -P 3306 -u admin -p

1. Create database rdsdb; and exit
2. Migrate the DB dump that you have taken in step 1 to RDS.

mysql -h database-1.c030o8c66sum.us-east-1.rds.amazonaws.com -P 3306 -u admin -p rdsdb < ec2db.sql

1. Connect to your RDS DB instance

mysql -h database-1.c030o8c66sum.us-east-1.rds.amazonaws.com -P 3306 -u admin -p

1. Show databases;
2. 
3. Use rdsdb;
4. Show tables;
5. Describe student;
6. Select \* from student;
7. 

**6) Install MySQL DB on ec2**

1. Add the official MySQL Yum repository
2. sudo dnf install -y <https://dev.mysql.com/get/mysql84-community-release-el9-1.noarch.rpm>
3. Install MySQL server

sudo dnf install -y mysql-community-server

1. Enable and start MySQL

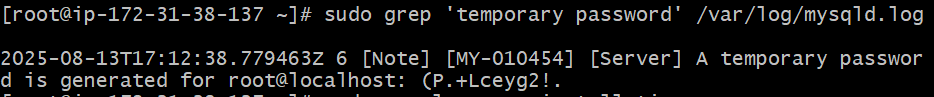
sudo systemctl enable --now mysqld

1. Check status

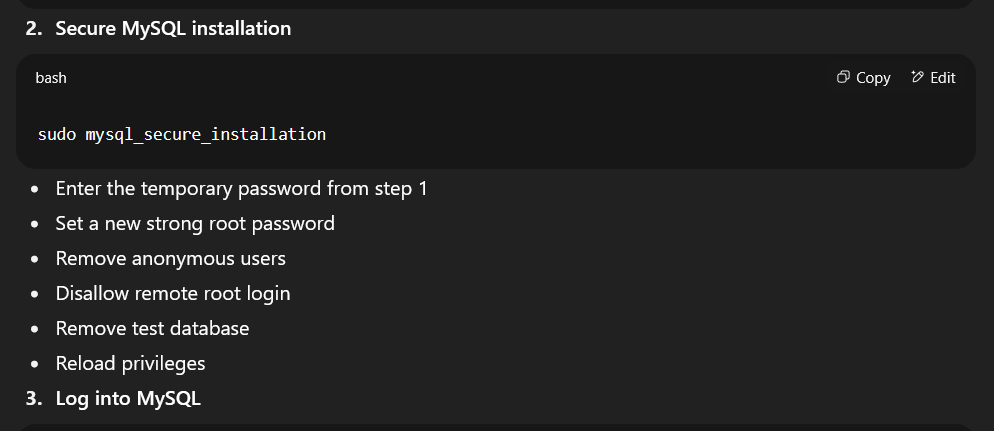
systemctl status mysqld

1. Get temporary root password and copy the password

sudo grep 'temporary password' /var/log/mysqld.log

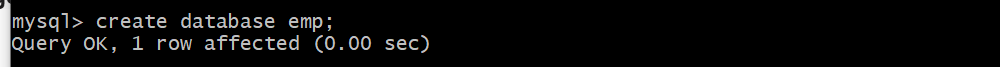
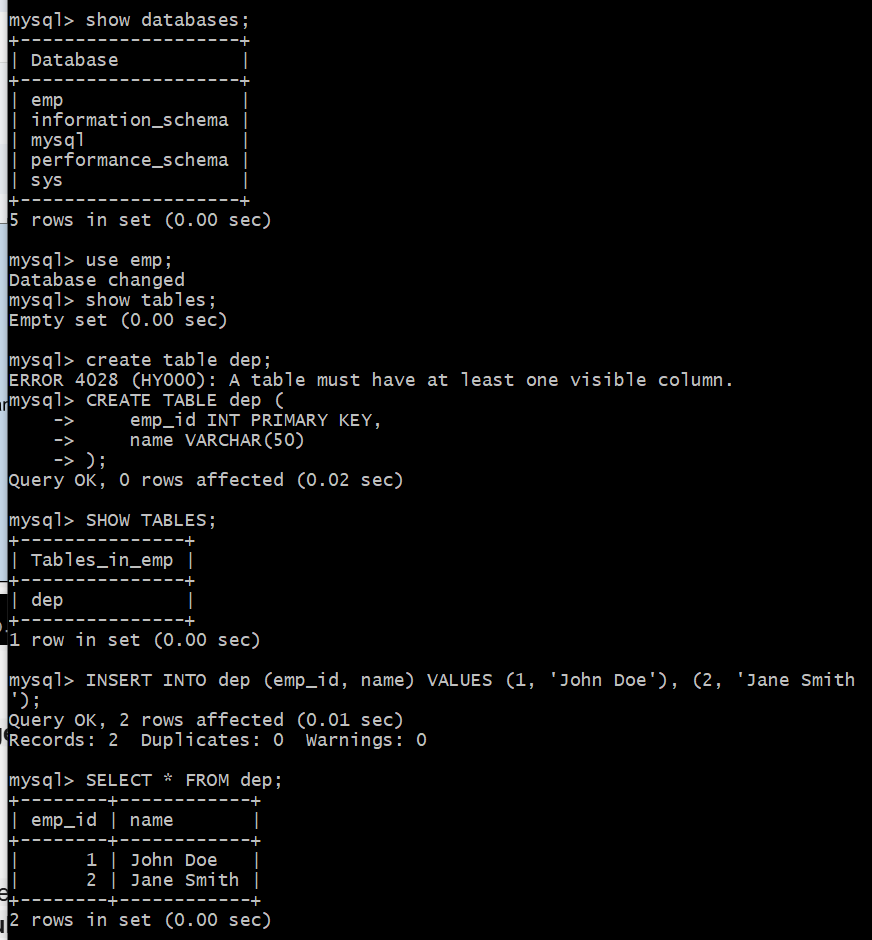
1. 
2. Start the secure installation. Follow the below things.

sudo mysql\_secure\_installation



1. Login to mysql

mysql -u root -p

1. 
2. 
3. 

**7) Launch MySQL RDS image**

**Go to AWS Console → RDS → Create database**

**Engine type**: MySQL

**Templates**: Free tier (or Production for HA)

**Settings**:

* DB instance identifier: my-mysql-db
* Master username: admin
* Master password: StrongPass123!

**DB instance size**: Choose db.t3.micro (for testing)

**Storage**: Default gp2/gp3

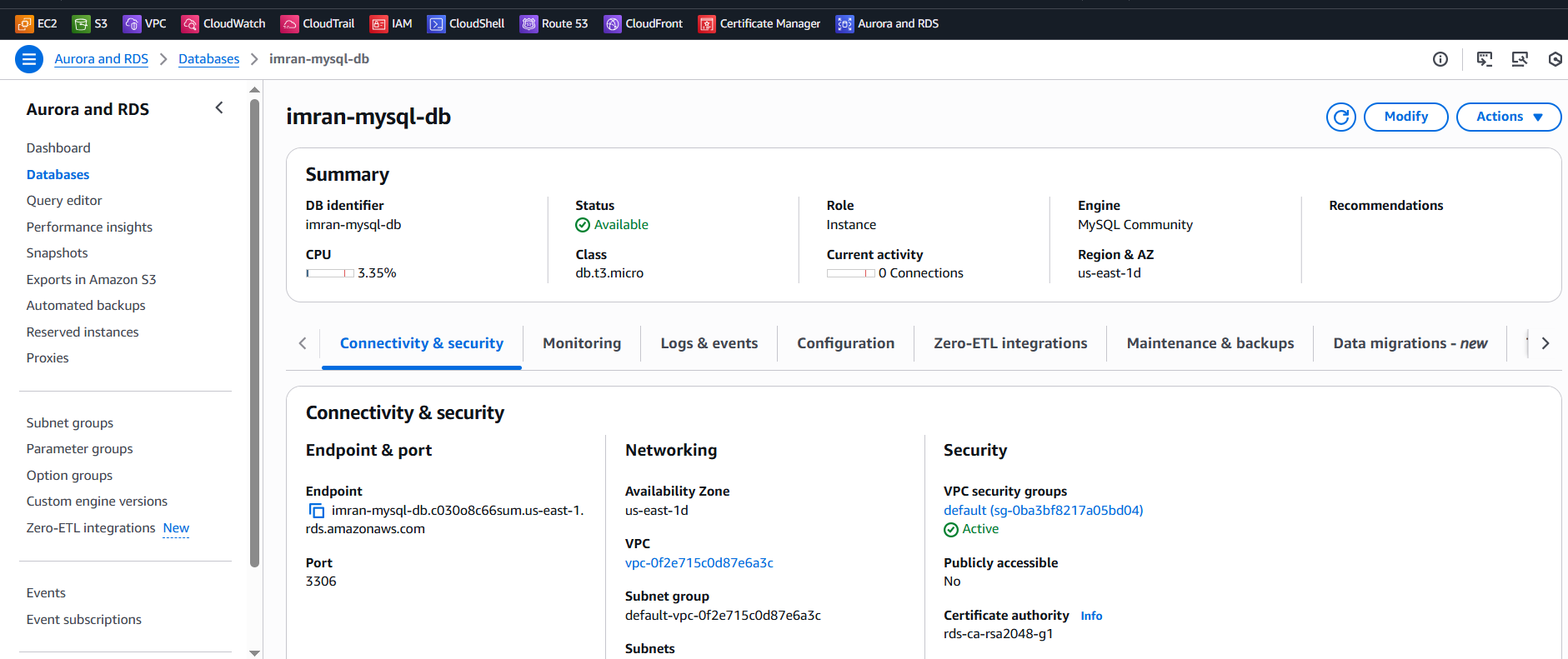
**Connectivity**:

* Choose VPC
* Enable public access (if needed for testing)
* Select/create a security group allowing port 3306

**Additional config**:

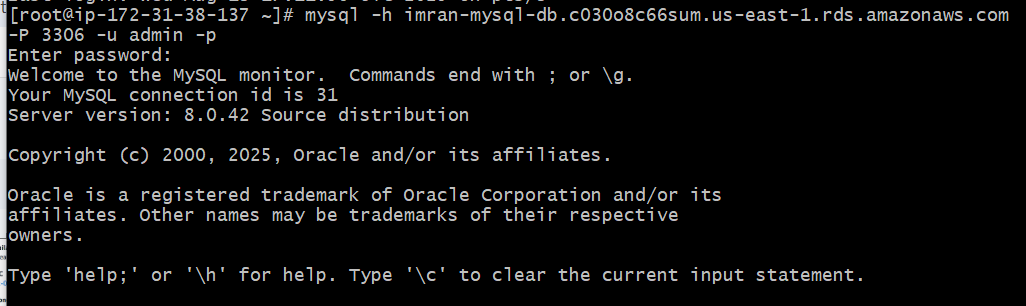
* Initial database name: mydb

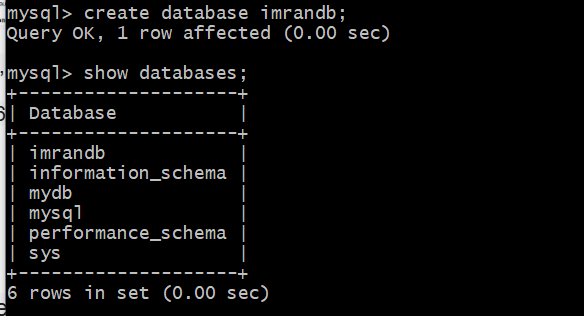
**Create database**.



SSH your instance and login mysql,

mysql -h imran-mysql-db.c030o8c66sum.us-east-1.rds.amazonaws.com -P 3306 -u admin -p



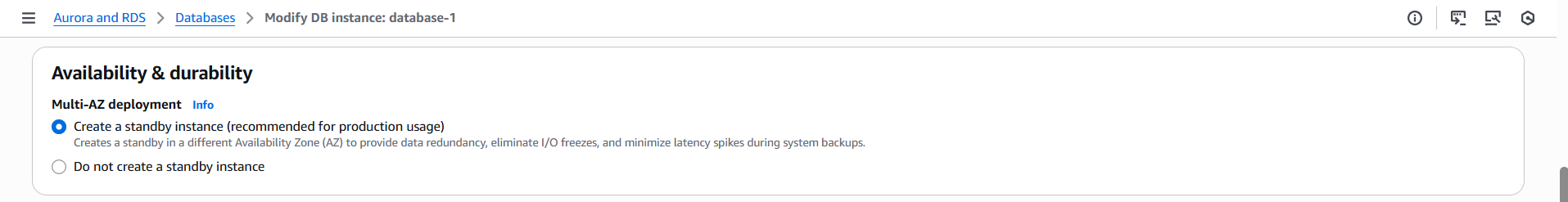


**8) Configure multi AZ**

In AWS Console → RDS → Select your DB → **Modify or (we can go from action → convert to Multi-AZ)**

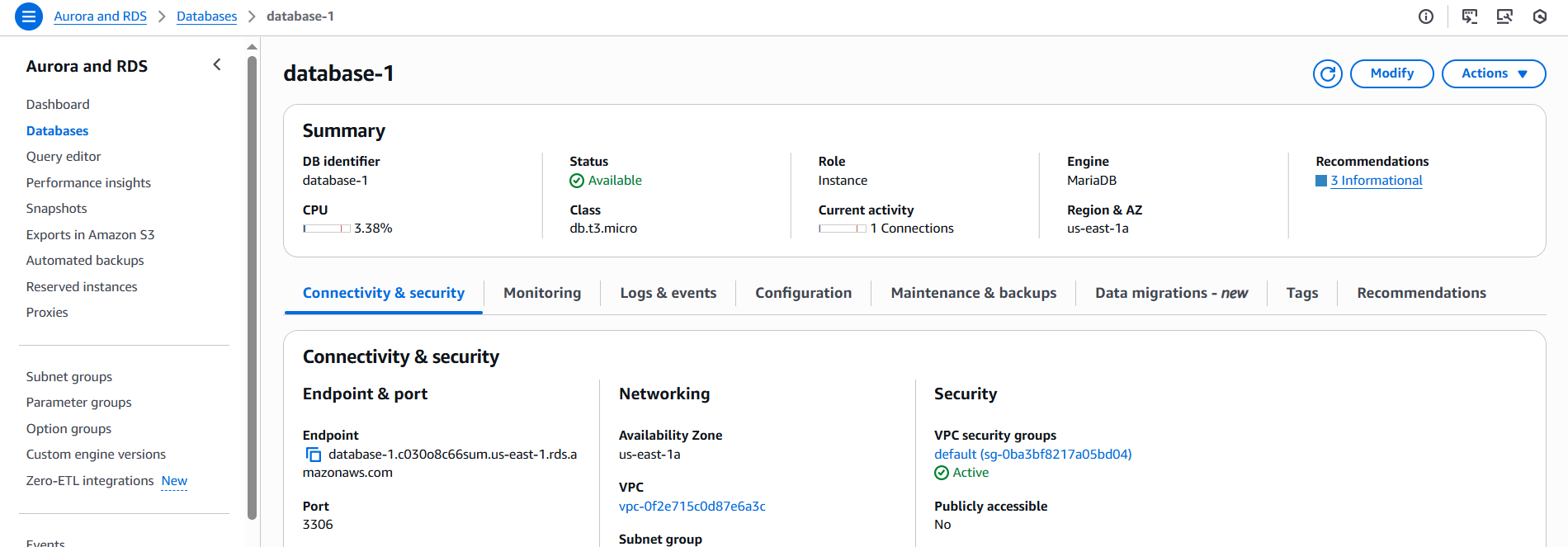
Under **Availability & durability**, enable **Multi-AZ deployment**

**Apply immediately**

****

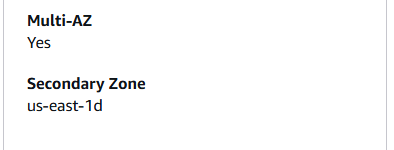
**The primary AZ showing in → Connectivity and security**

**us-east-1a**

****

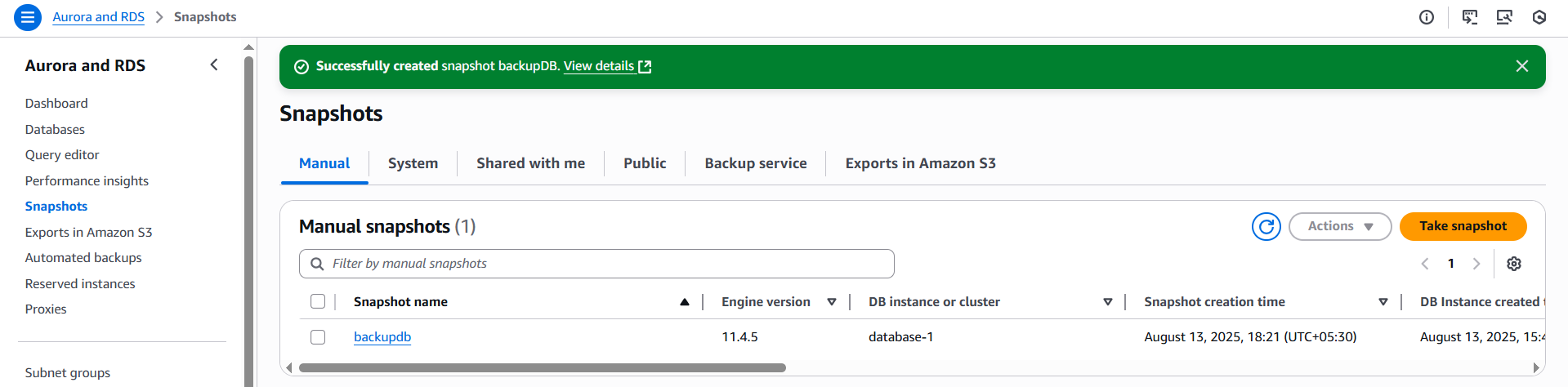
In configuration tab we can check multi-AZ

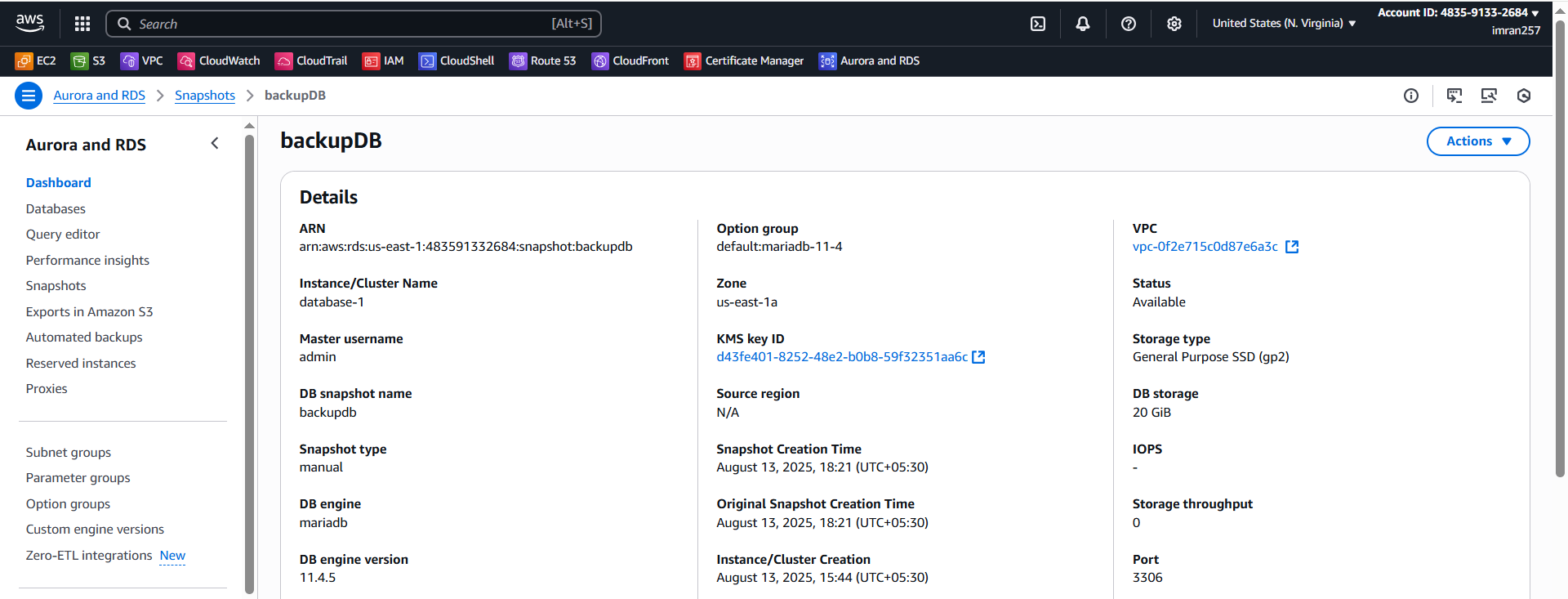
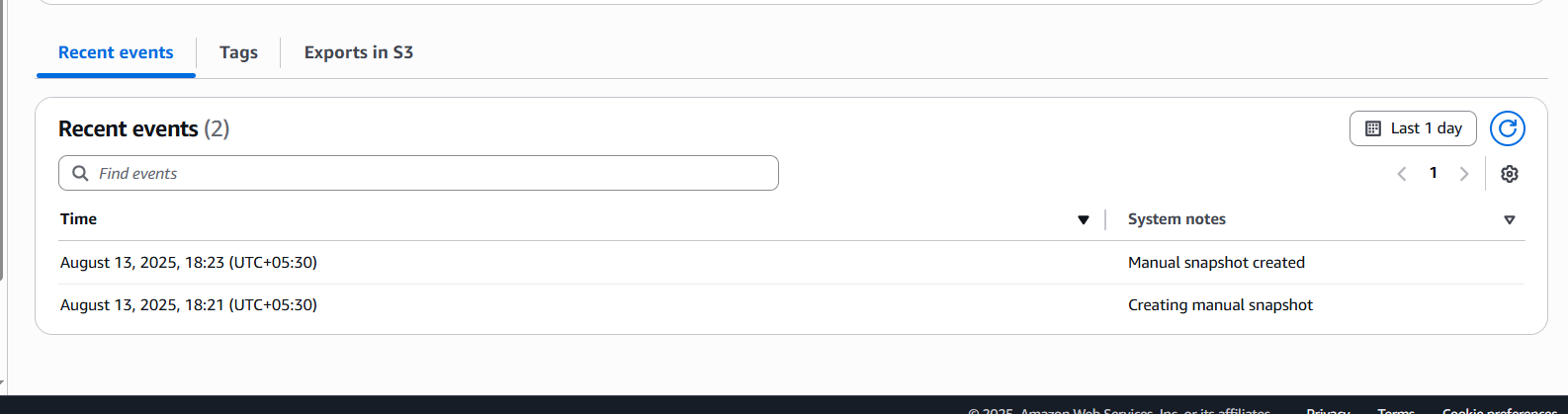
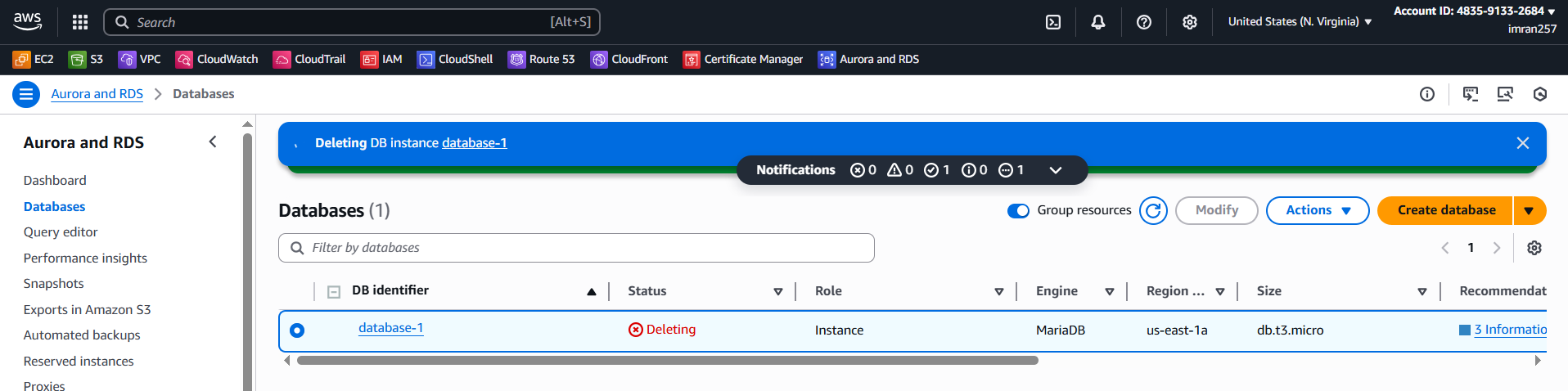
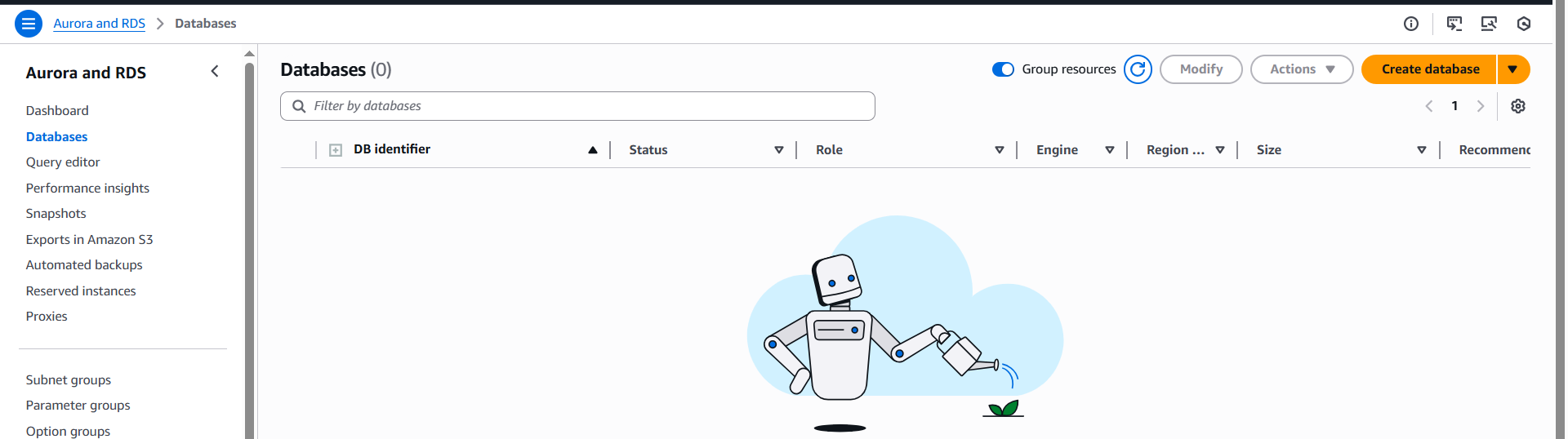
us-east-1d

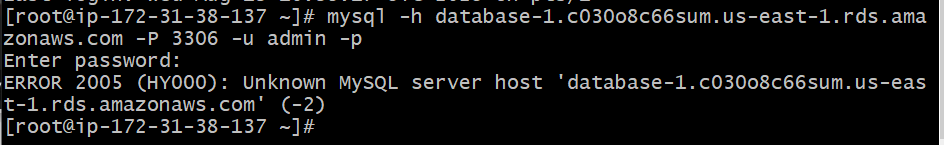


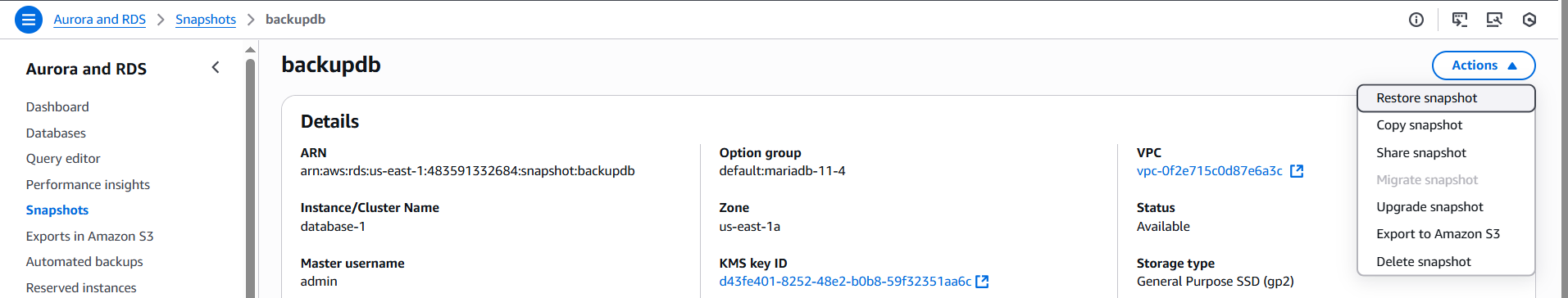
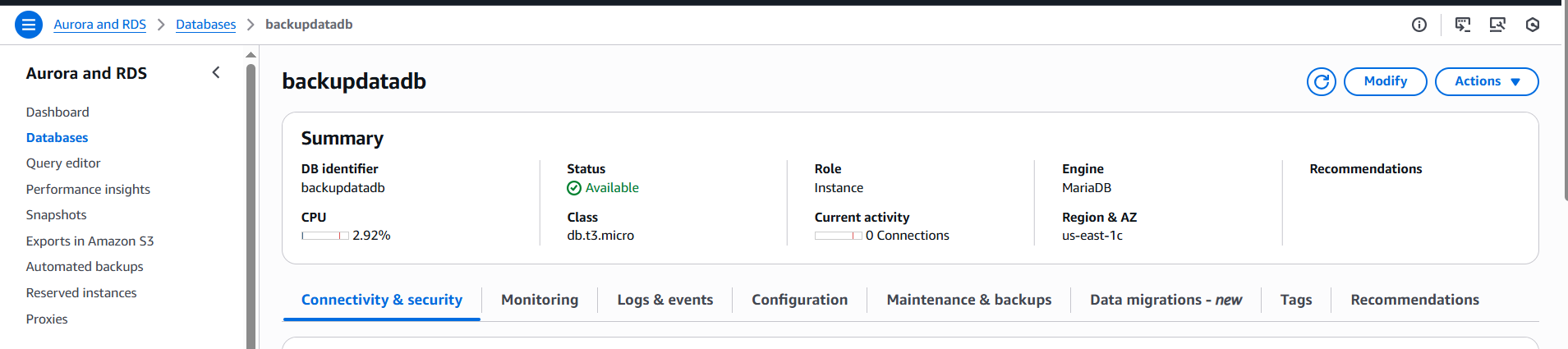
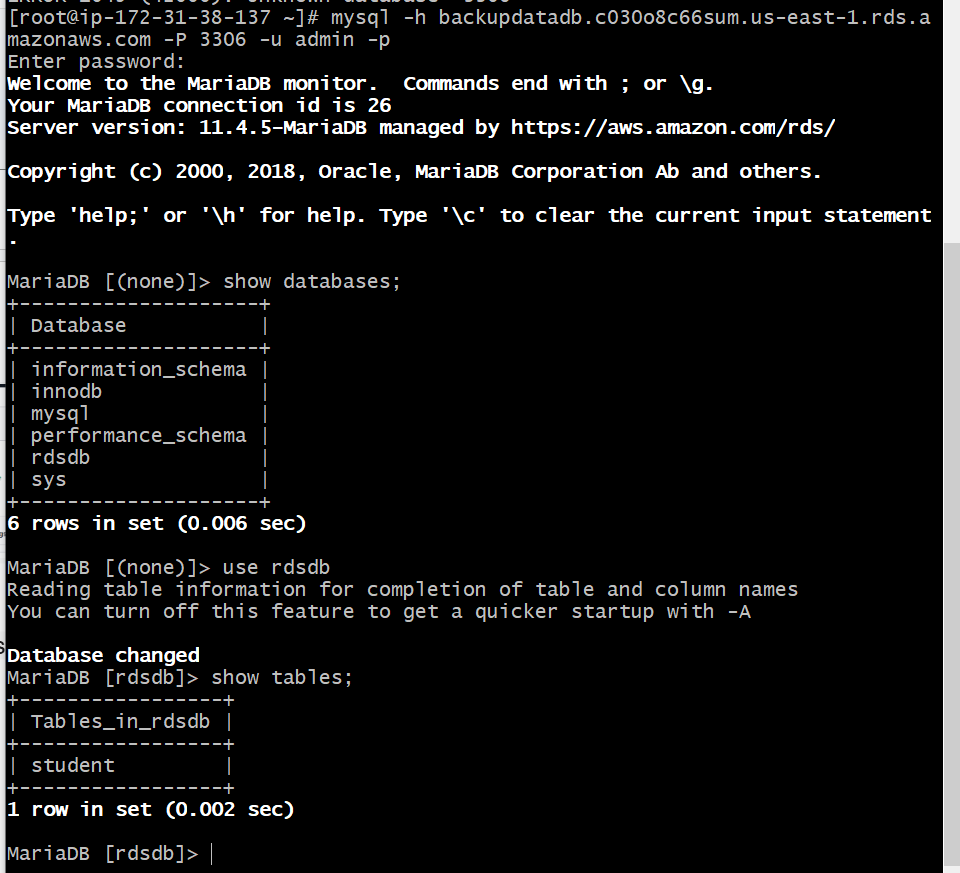
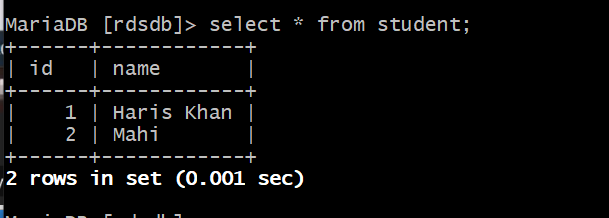
**9) Take Backup of DB and restore the DB**

1. Go to actions → snapshot and name it and create



1. 
2. 
3. Now deleting database
4. 
5. 



1. Restoring db from backup
2. 
3. The backupdb restored as backupdatadb
4. 
5. Checking with endpoint
6. mysql -h backupdatadb.c030o8c66sum.us-east-1.rds.amazonaws.com -P 3306 -u admin -p
7. 
8. 

**10) Create Read Replica**

**A Read Replica is a copy of your database that automatically gets updated from the primary DB using asynchronous replication.**

**Main Benefits:**

* **Read Scaling – Offload heavy SELECT queries from the primary DB to the replica.**
* **Disaster Recovery – If the primary DB fails, you can promote the replica to become the new primary.**
* **Reporting – Use the replica for analytics/reporting without affecting primary performance.**
* **Global Performance – Place replicas in other AWS regions to serve local users faster.**

Go to **RDS → Databases**.**(Make sure your database Enabled Automatic Backup )**

Select your MySQL instance.

Click **Actions → Create read replica**.

**Settings**:

* DB instance identifier: my-mysql-read-replica
* Optionally choose a different AZ or region (for cross-region).

Keep **Multi-AZ** disabled for read replicas (they are for scaling reads).

Click **Create read replica**.

Wait until status changes to **available**.

