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

**Install Db on ec2 steps:**

**Begin Configuration :**

**===================**

**sudo su -**

**dnf -y install mariadb-server wget**

**systemctl enable mariadb**

**systemctl start mariadb**

**dnf -y update**

**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**

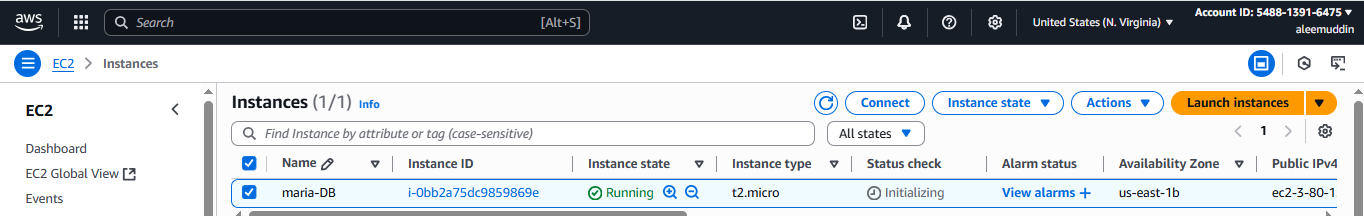
**echo "GRANT ALL PRIVILEGES ON \*.\* TO '${DBUser}'@'%';" >> /tmp/db.setup**

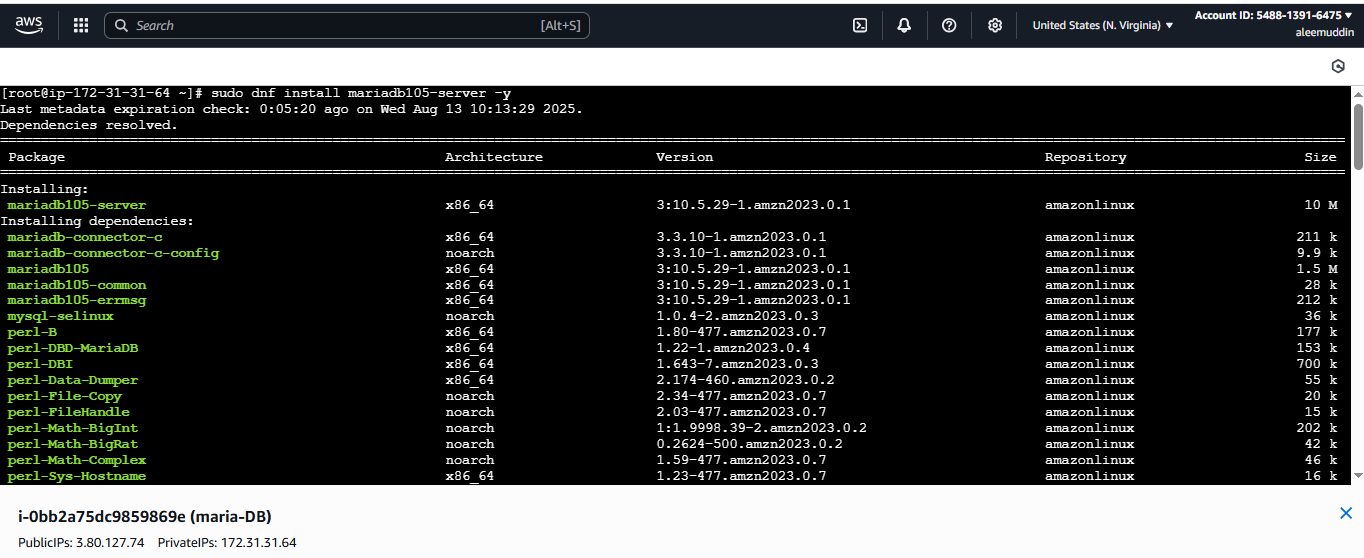
**echo "FLUSH PRIVILEGES;" >> /tmp/db.setup**

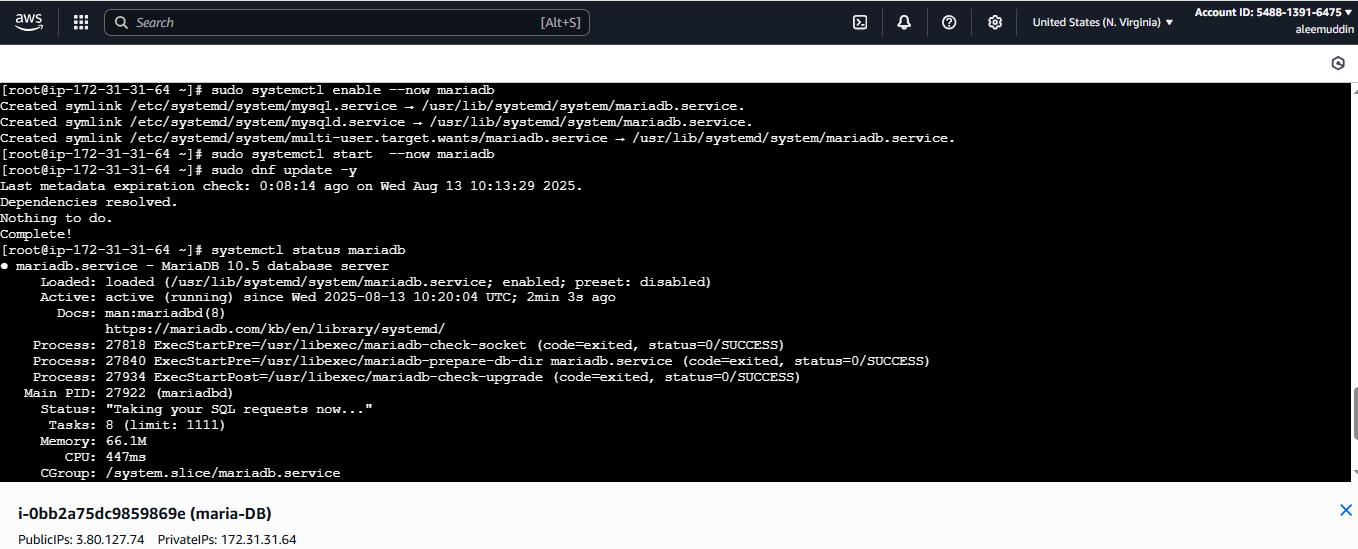
**mysqladmin -u root password "${DBRootPassword}"**

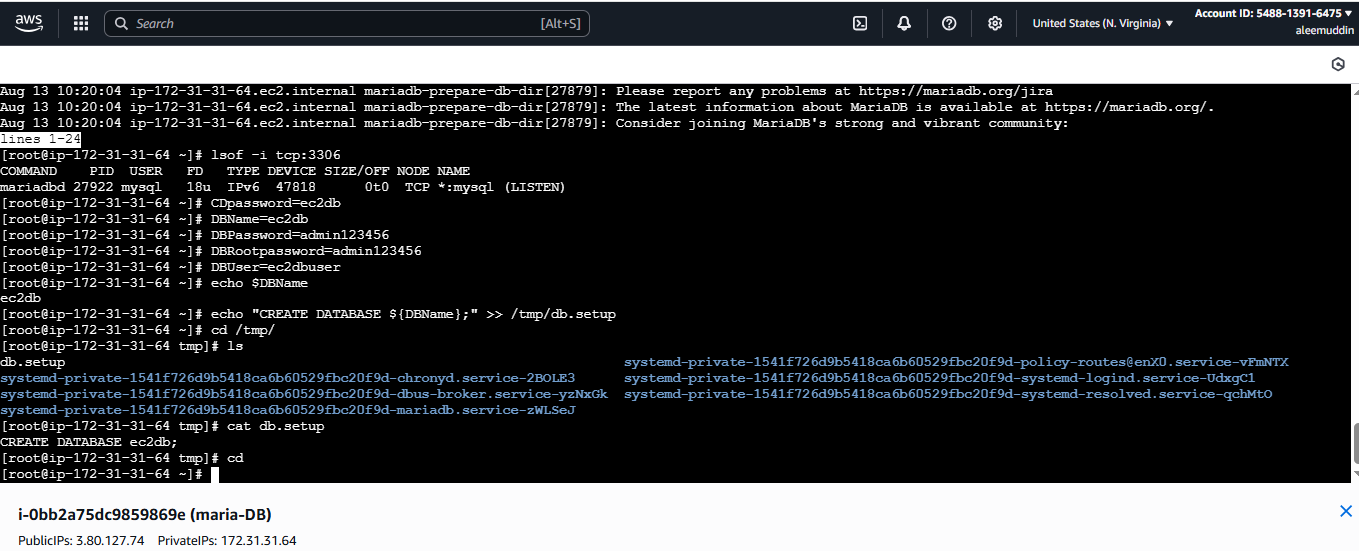
**mysql -u root --password="${DBRootPassword}" < /tmp/db.setup**

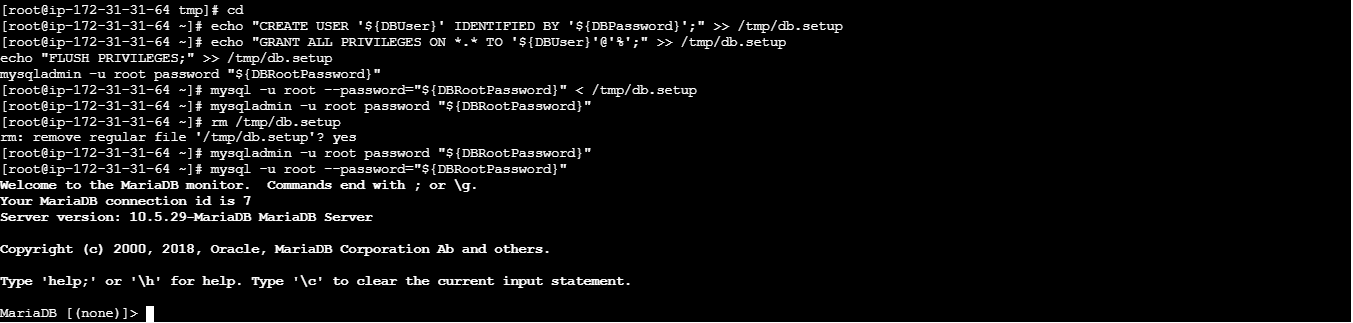
**rm /tmp/db.setup**

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**  
2) Insert some dummy data**

**Adding some dummy data to the Database inside EC2 Instance:**

**==========================================================**

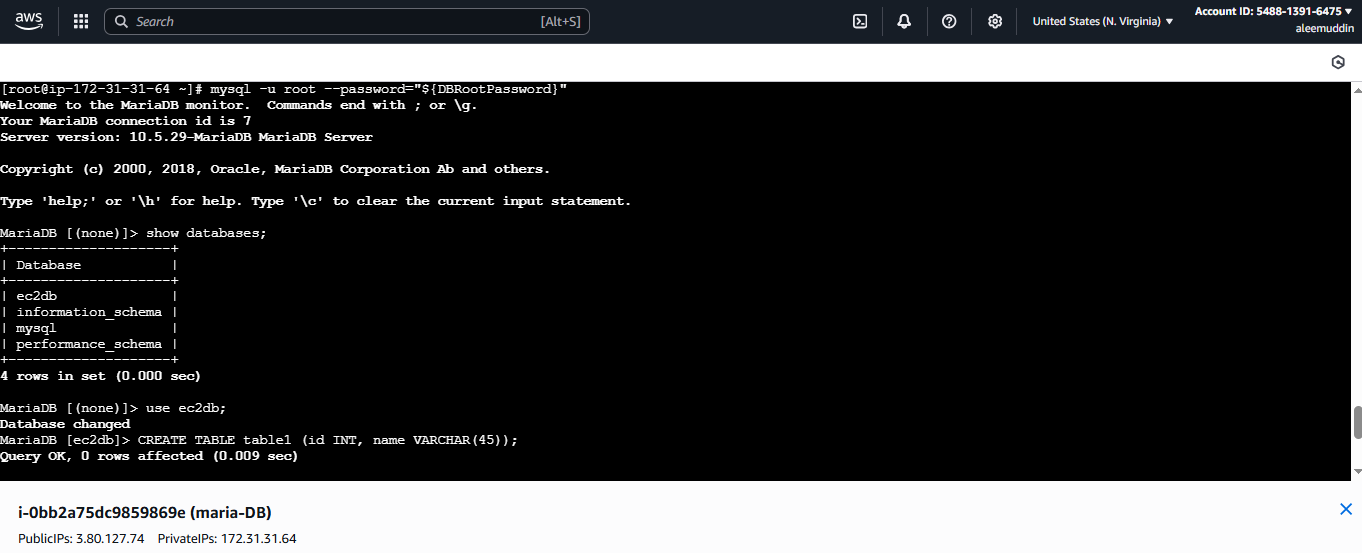
**mysql -u root --password="${DBRootPassword}"**

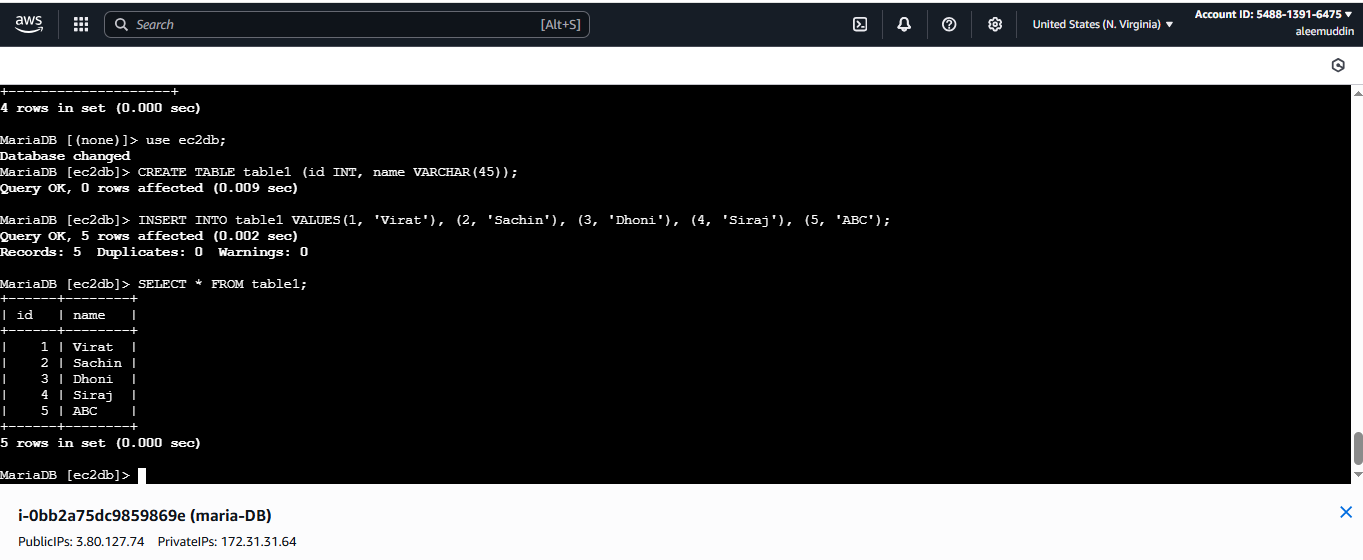
**USE ec2db;**

**CREATE TABLE table1 (id INT, name VARCHAR(45));**

**INSERT INTO table1 VALUES(1, 'Virat'), (2, 'Sachin'), (3, 'Dhoni'), (4, 'Siraj'), (5, 'ABC') ;**

**SELECT \* FROM table1;**

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****

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

**1) Get the dump of your existing DB on EC2**

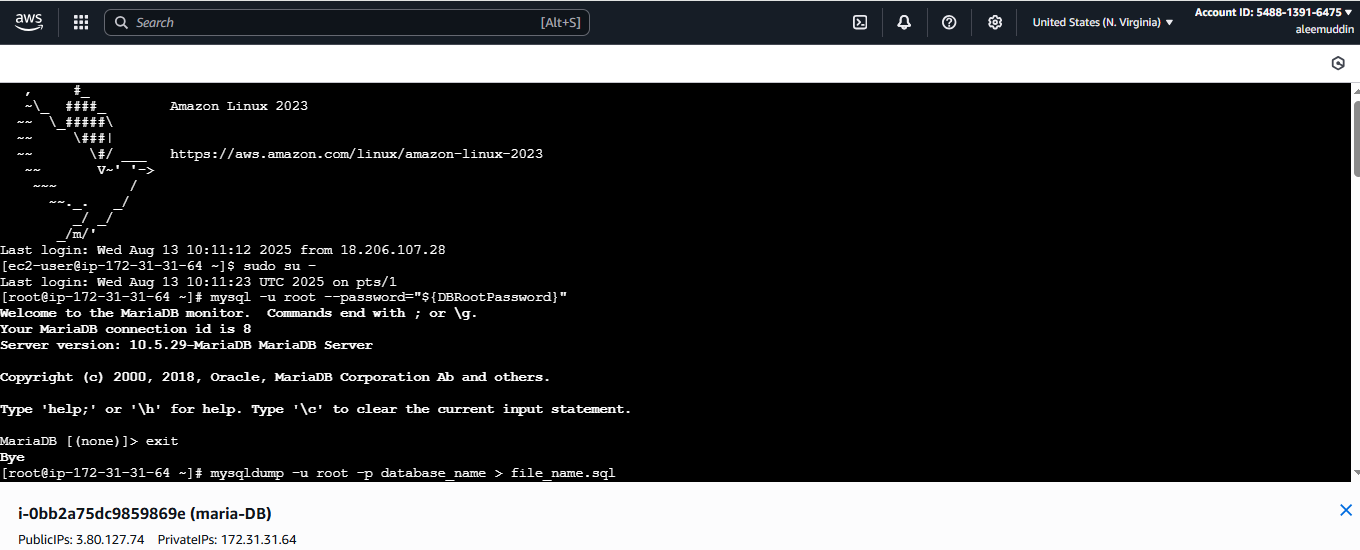
**mysqldump -u root -p database\_name > file\_name.sql**

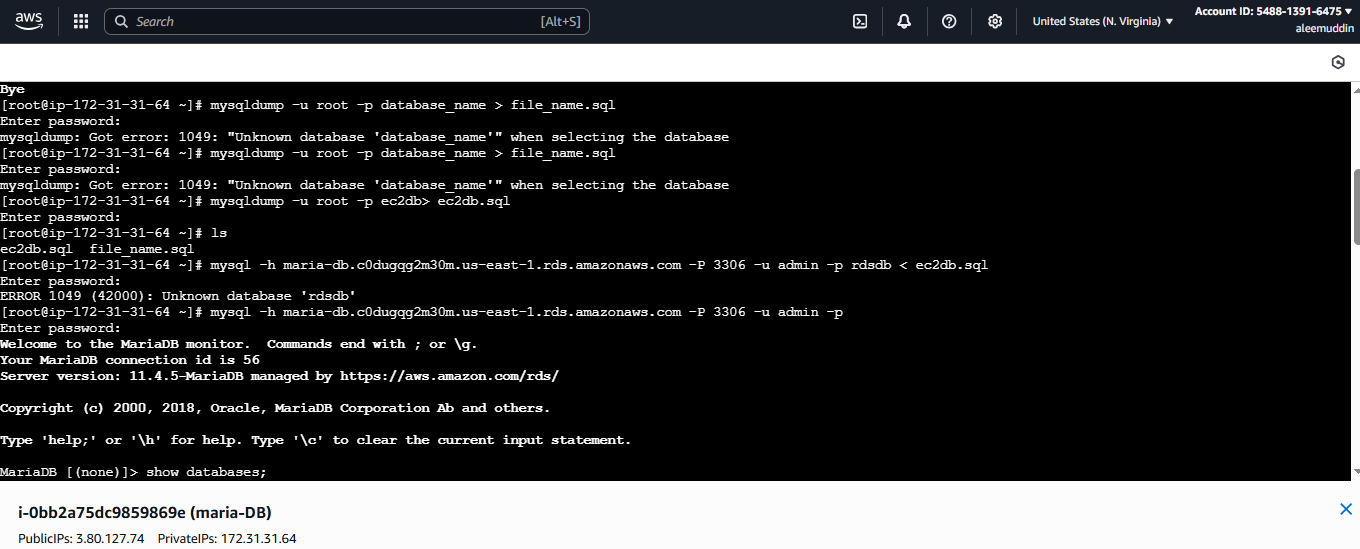
**2) Migrate the DB dump that you have taken in step 1 to RDS**

**mysql -h <replace-rds-end-point-here> -P 3306 -u <user\_name> -p database\_name < ec2db.sql**

**3) Connect to your RDS DB instance**

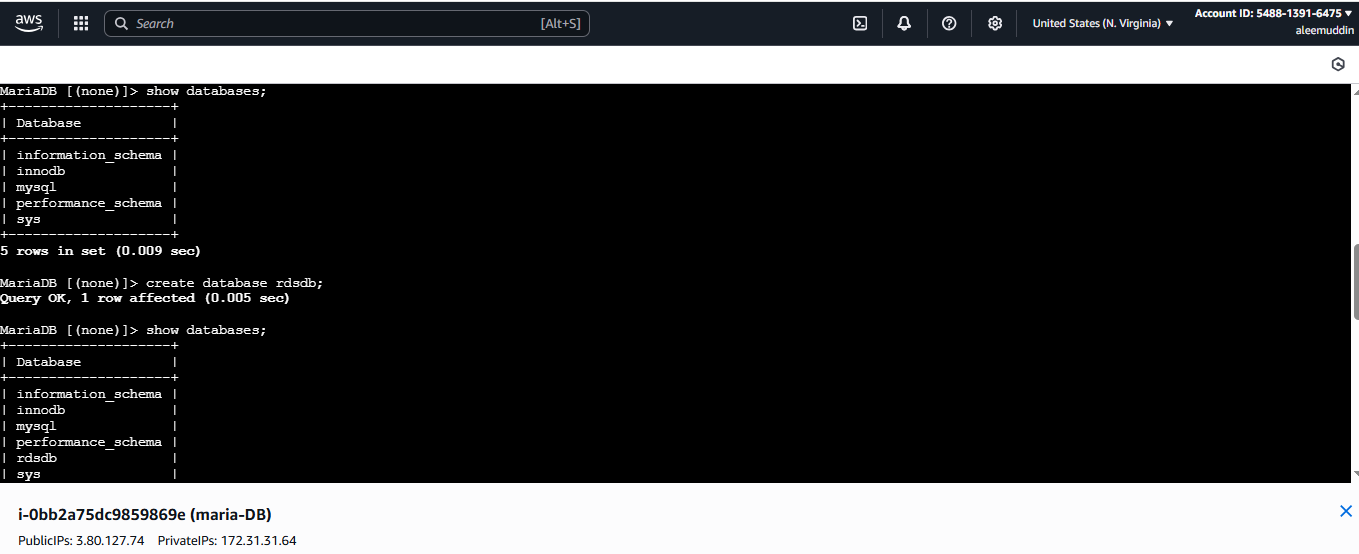
**mysql -h <replace-rds-end-point-here> -P 3306 -u rdsuser –p**

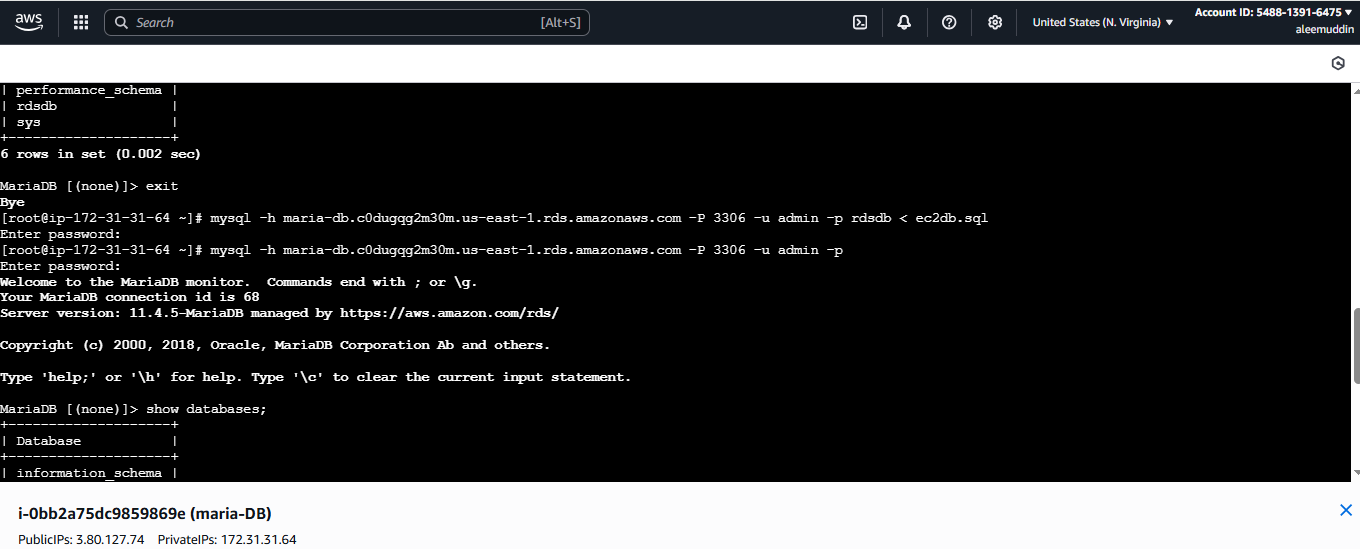
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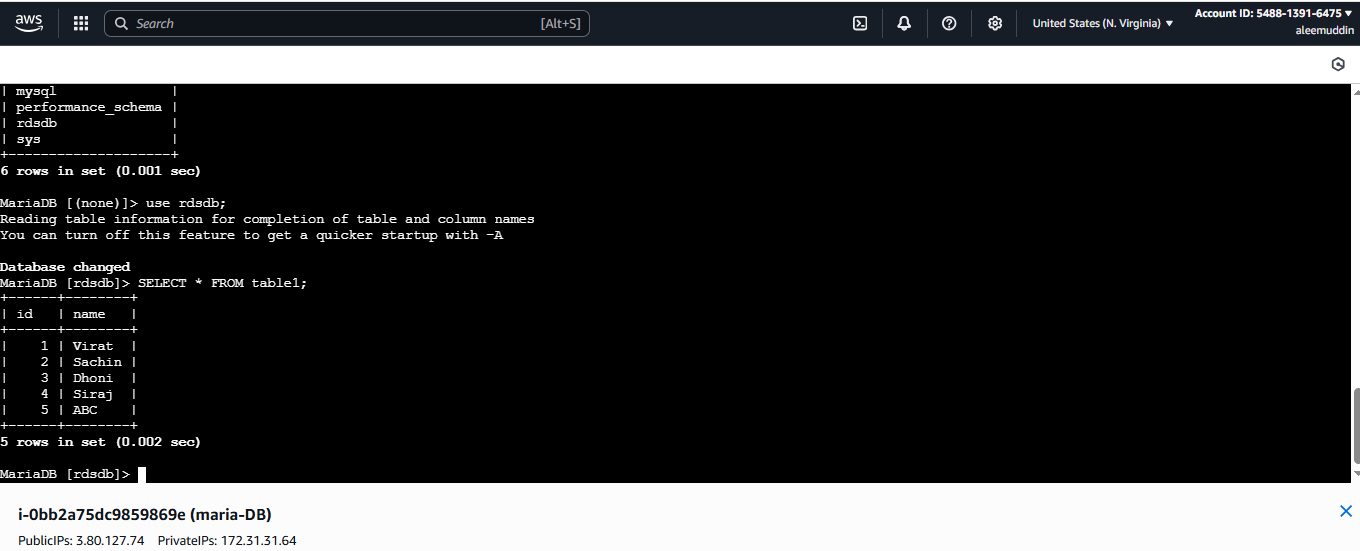
****

**Show databases;**

**Create database rdsdb;**

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**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**

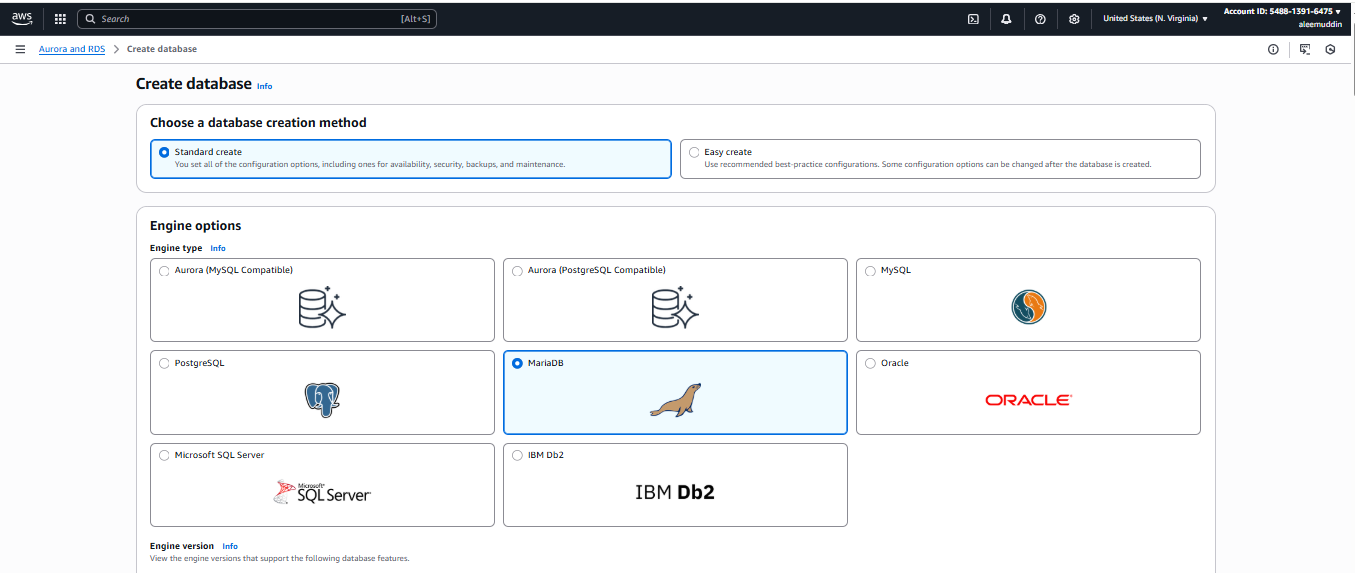
**Connectivity →**

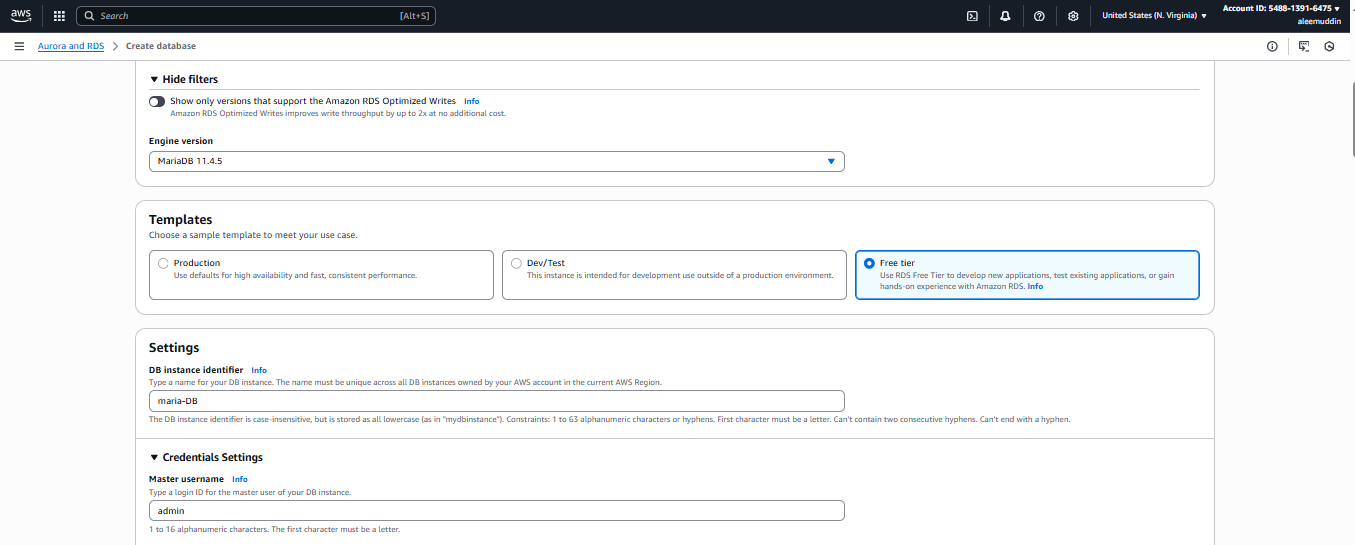
* **VPC: Choose your VPC**
* **Public access: No (recommended)**
* **Security group: Choose SG that allows port 3306 from EC2**

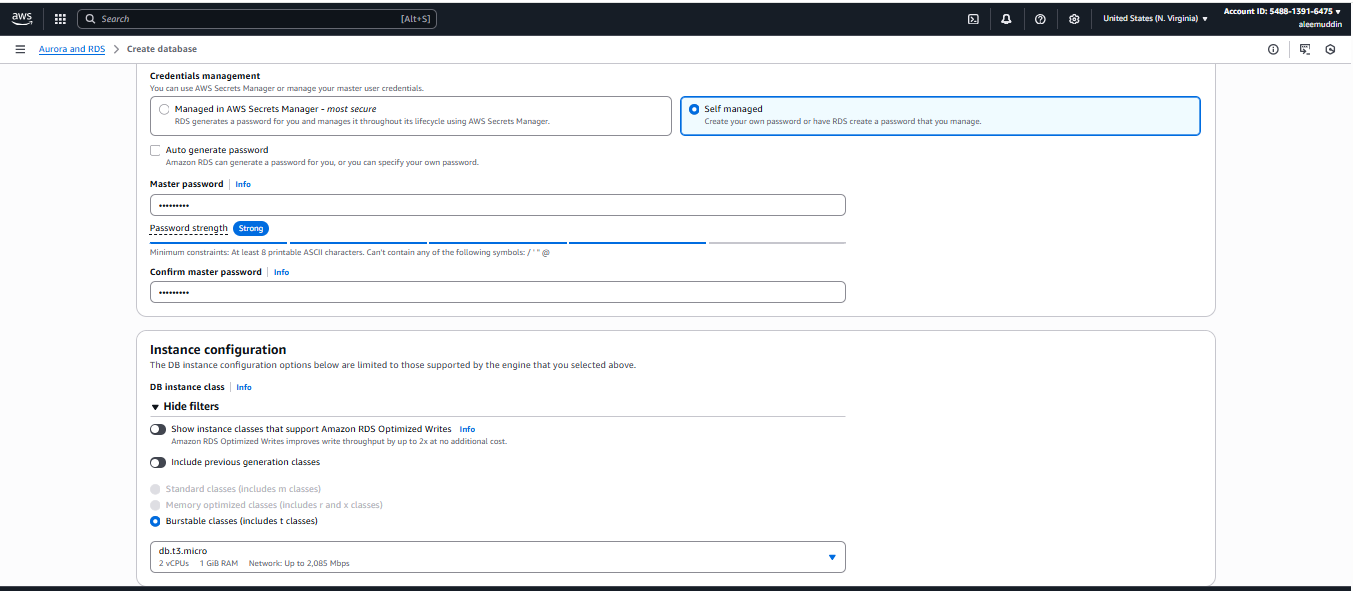
**Database authentication → Password authentication**

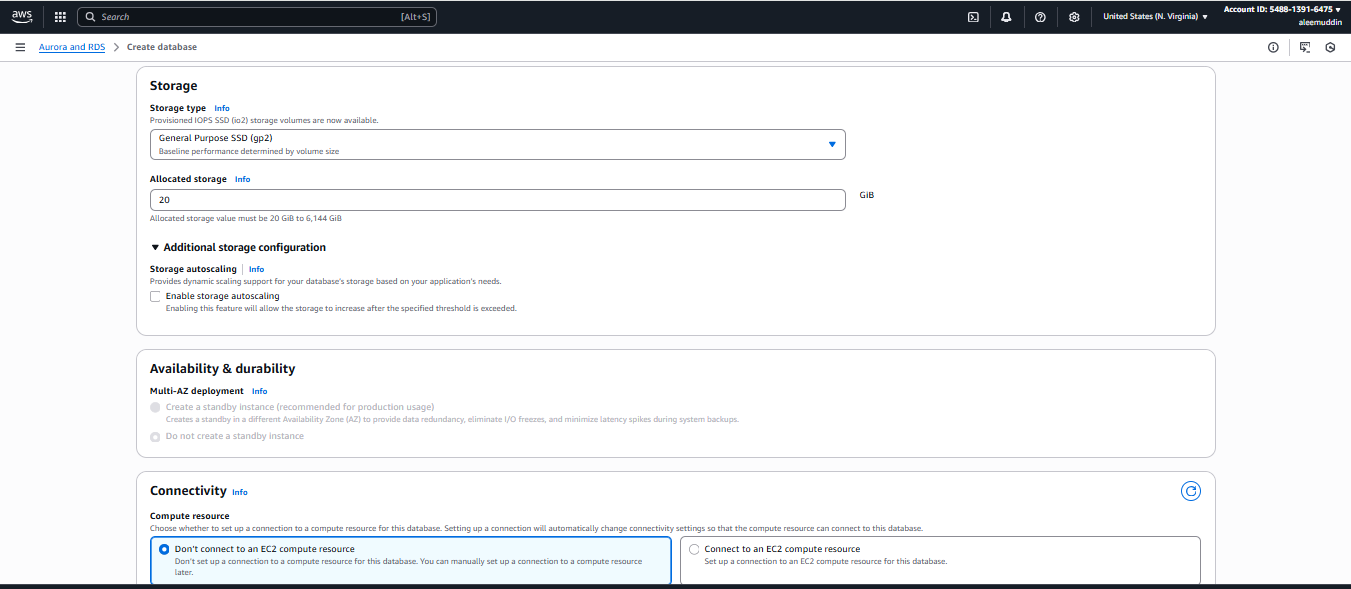
**Click *Create database***

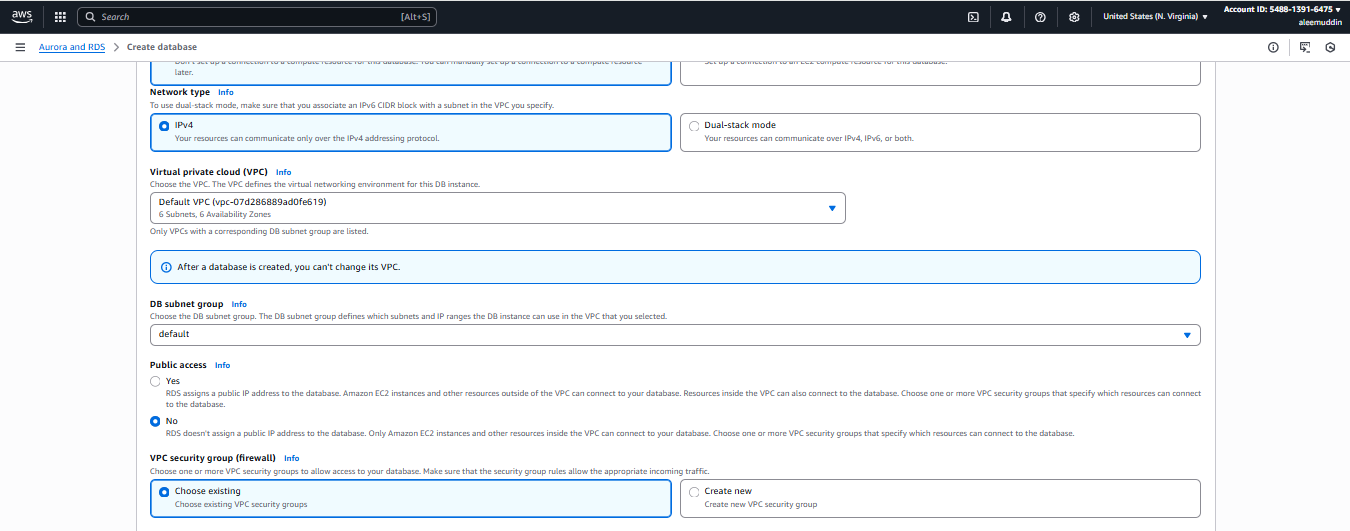
**Wait for Status → Available**

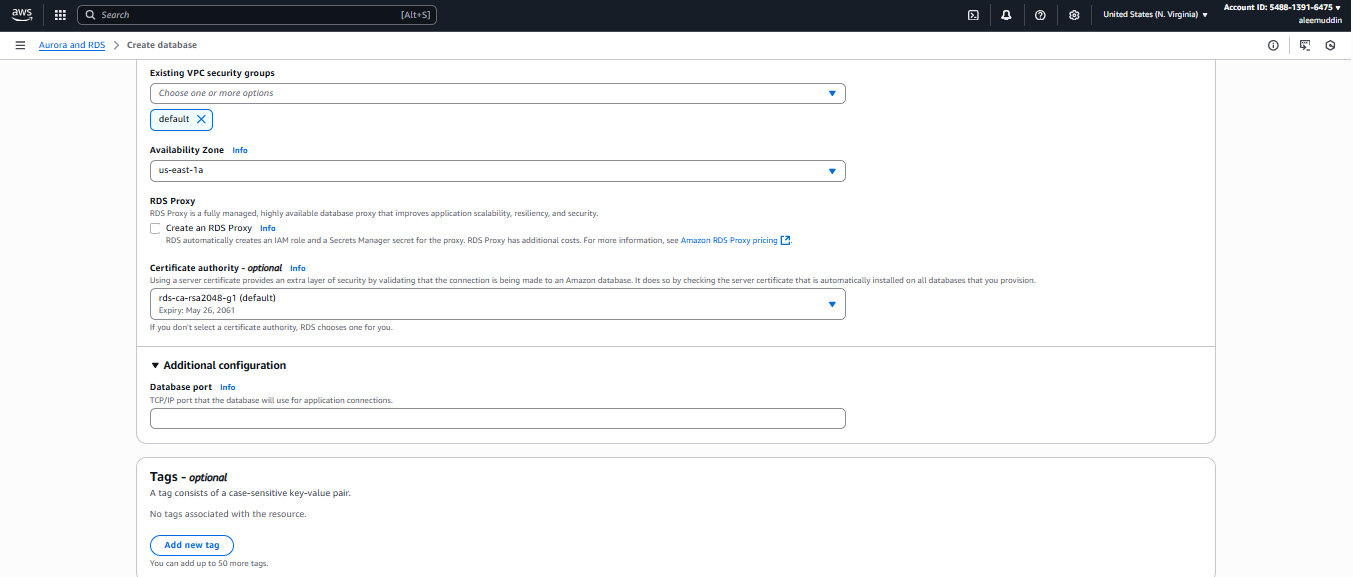
****

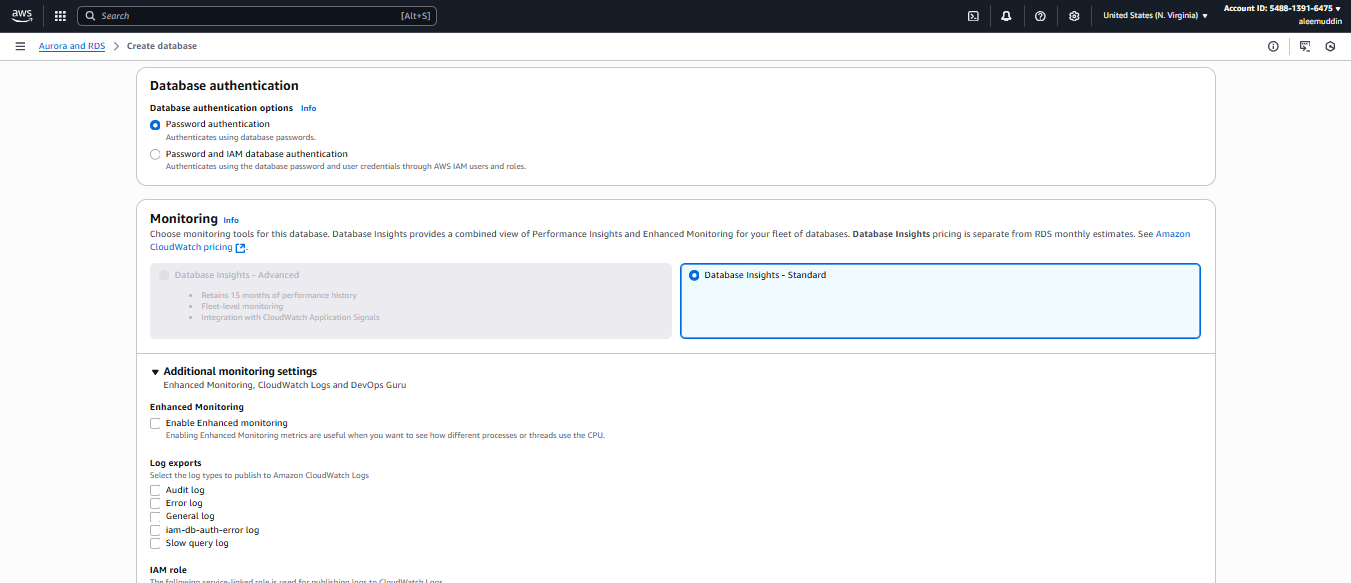
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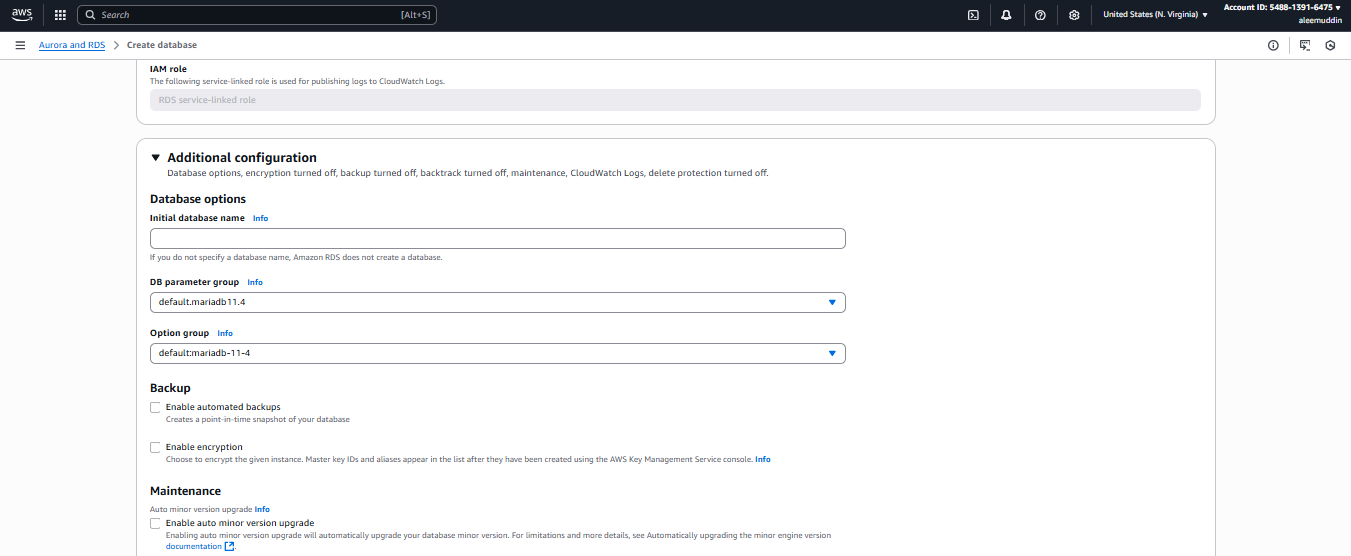
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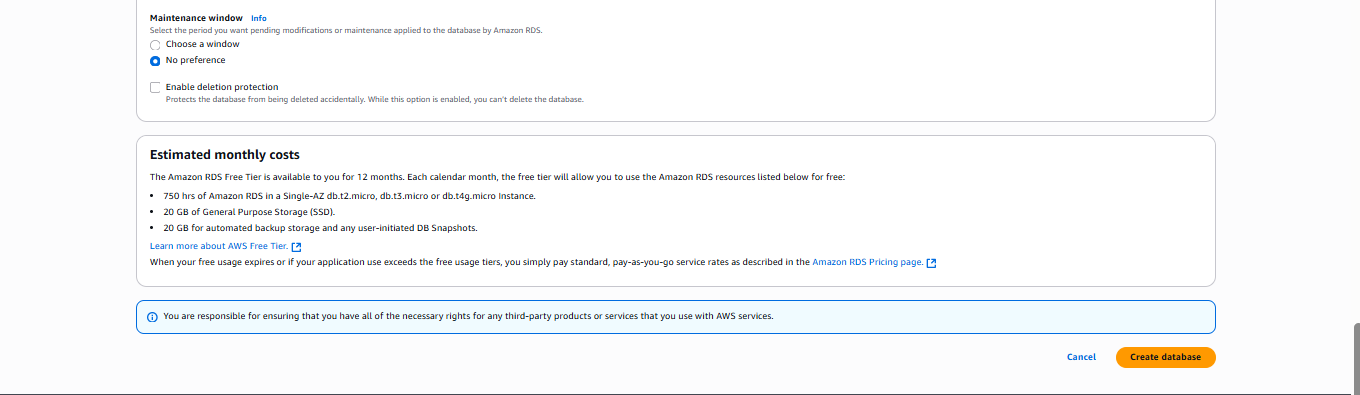
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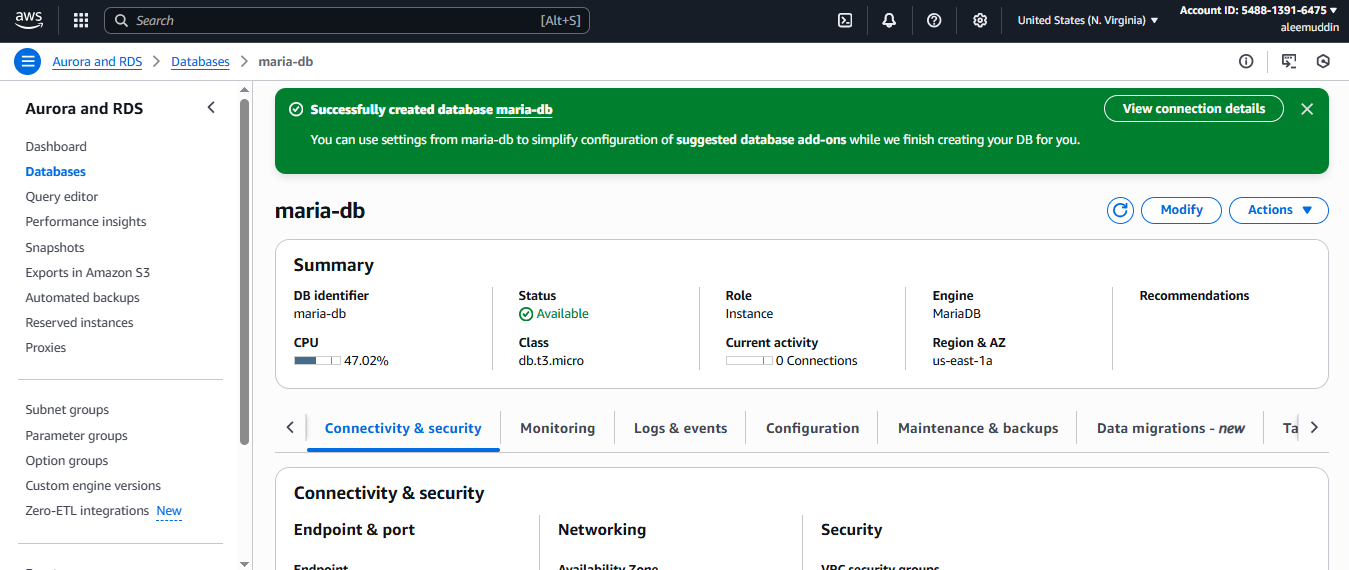
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**5) Migrate database from ec2 to RDS.**

**Migrate the DB dump that you have taken in step 1 to RDS**

**mysql -h <replace-rds-end-point-here> -P 3306 -u <user\_name> -p database\_name < ec2db.sql**

**Connect to your RDS DB instance**

**mysql -h <replace-rds-end-point-here> -P 3306 -u rdsuser –p**

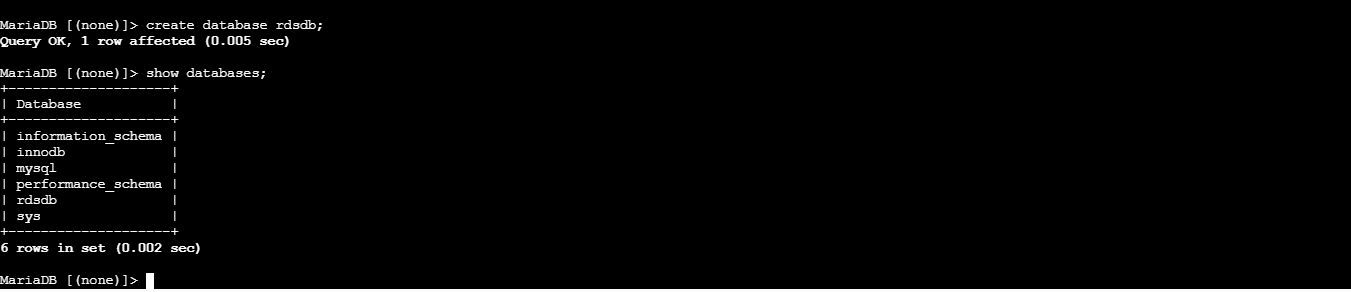
**Show databases;**

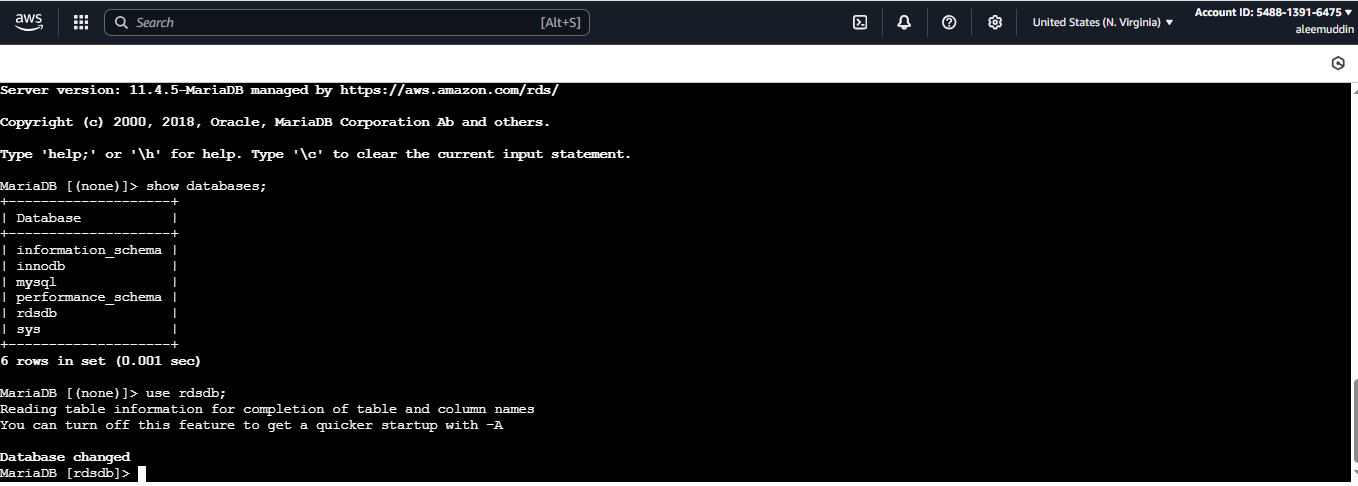
**Create database rdsdb;**

**Switch to the database and verify the details.**

**USE rdsdb**

**SELECT \* FROM table1;**

****

****

**6) Install MySQL DB on ec2**

**1. Update system**

**sudo dnf update -y**

**2. Add MySQL Yum repository**

**sudo dnf install -y https://dev.mysql.com/get/mysql80-community-release-el9-1.noarch.rpm**

**3. Install MySQL server**

**sudo dnf install -y mysql-community-server**

**4. Start & enable service**

**sudo systemctl enable --now mysqld**

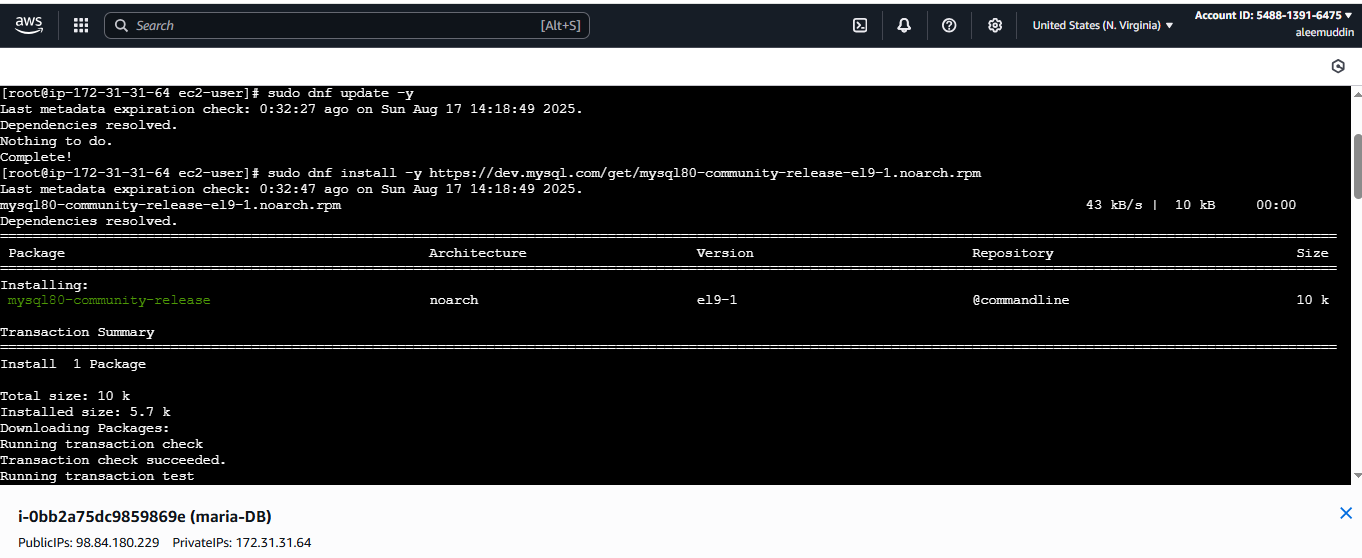
**sudo systemctl status mysqld**

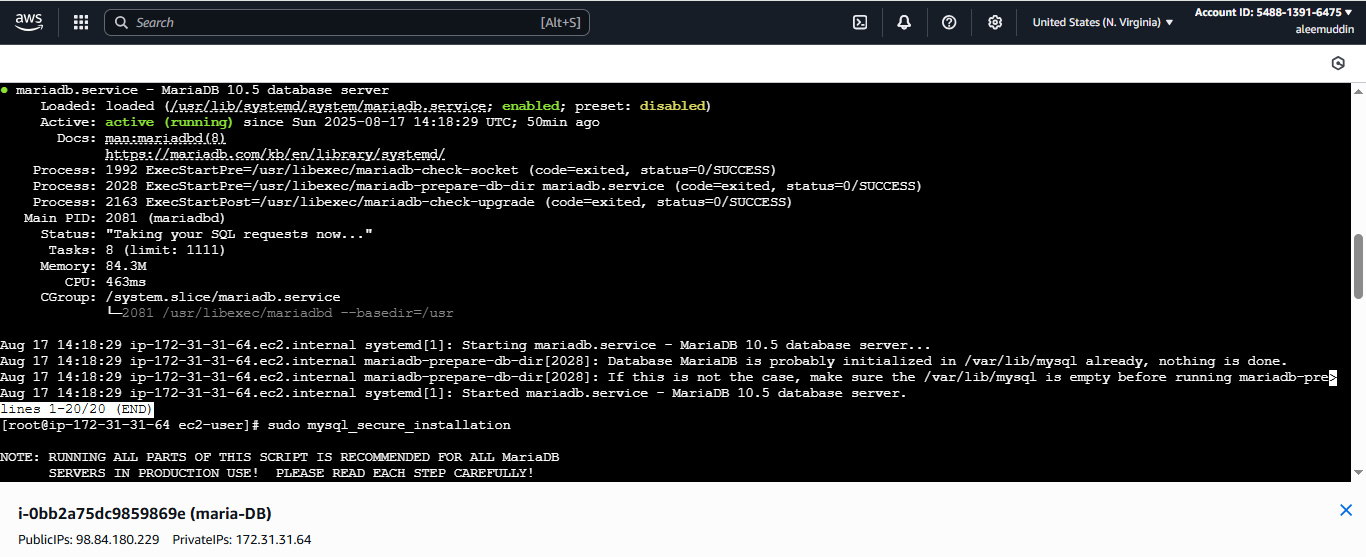
**5. Get temporary root password**

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

**6. Secure MySQL**

**sudo mysql\_secure\_installation**

****

****

**7) Launch MySQL RDS image**

### Sign in to AWS Console

**Go to → Services → RDS → Databases → Create database.**

### Choose Database Creation Method

* **Standard create (gives you full control)**
* **Or Easy create (simpler, but fewer options)**

**Select Standard create for more flexibility.**

### Engine Options

* **Engine type → Select MySQL**
* **Version → Choose a stable version (e.g., MySQL 8.0.x LTS)**

### Templates

**Choose based on use case:**

* **Production (Multi-AZ, backups enabled, more costly)**
* **Dev/Test (Single-AZ, cheaper)**

### Settings

* **DB instance identifier → e.g., mydb-mysql**
* **Master username → e.g., admin**
* **Master password → choose a strong password (or auto-generate and download)**

### Instance Configuration

* **Instance type → e.g., db.t3.micro (free-tier eligible) or db.t3.medium for small workloads**
* **Storage → General Purpose (gp3), start with 20GB (auto-scaling optional)**

### Connectivity

* **VPC → Choose your VPC (default or custom)**
* **Subnet group → Usually default unless you made custom subnets**
* **Public access →**
  + **Yes if you want to connect from outside AWS (not recommended for production)**
  + **No if only accessed inside VPC (best practice)**
* **VPC security group → Create/attach one allowing TCP 3306 from your IP or app servers**

### Additional Config

* **Initial database name → e.g., appdb**
* **Automatic backups → Enable (set retention, e.g., 7 days)**
* **Encryption → Enable if required**
* **Monitoring → Enable Enhanced monitoring if needed**

### Create Database

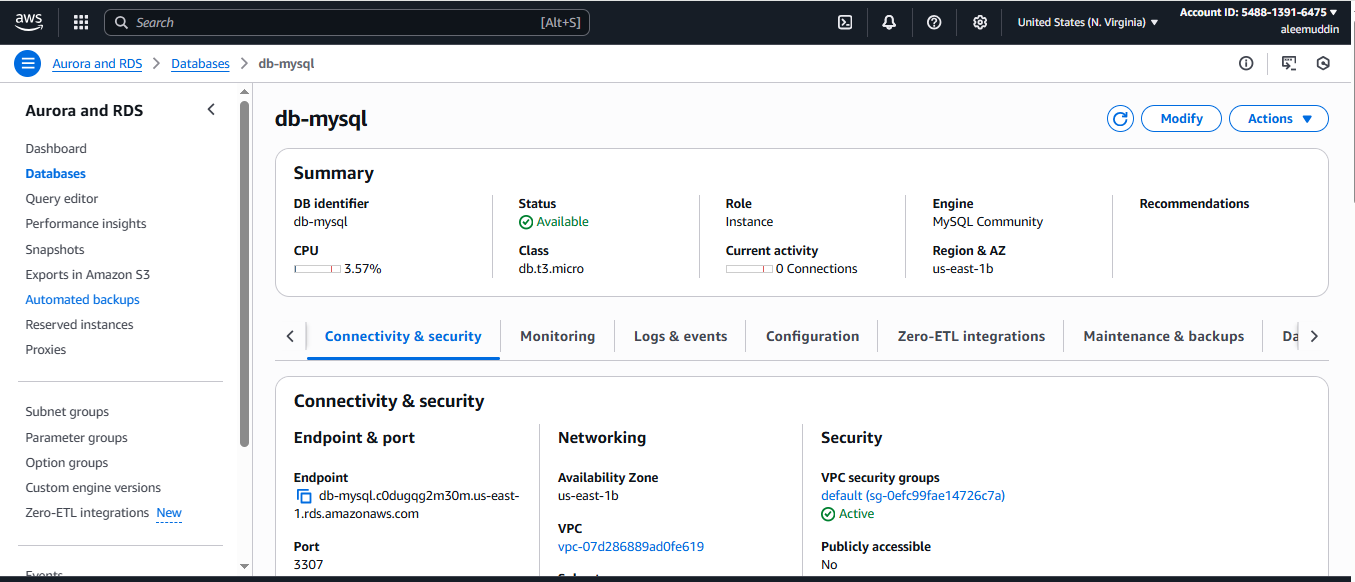
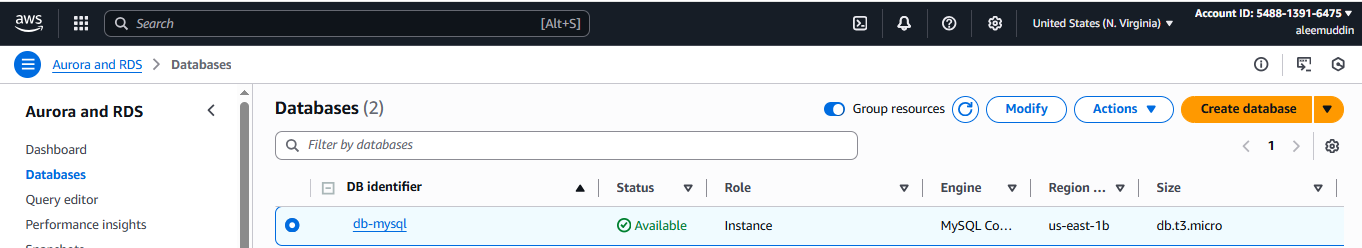
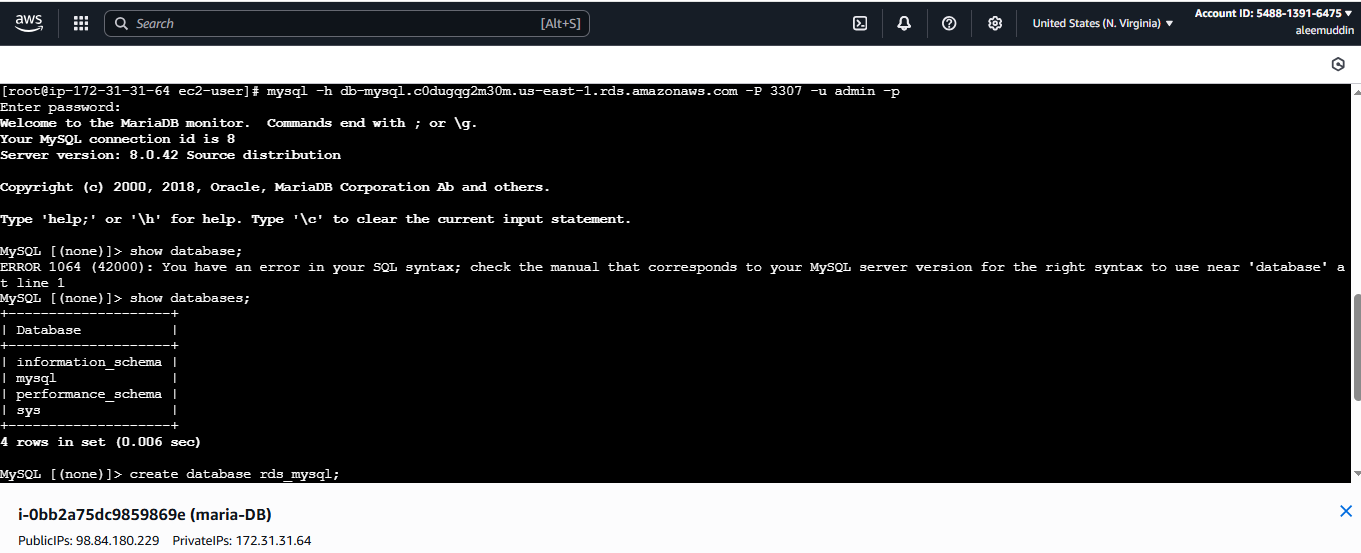
**Click Create database → AWS will provision your RDS instance (may take 5–10 minutes).**

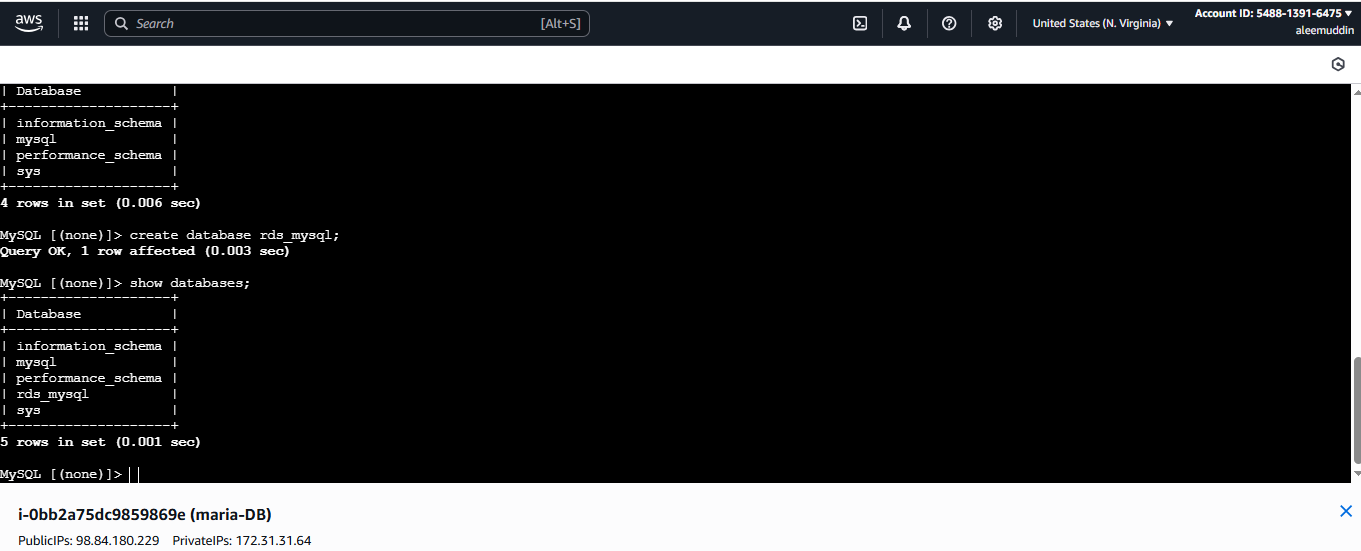
### Connect to RDS

**Once status = Available:**

* **Copy the Endpoint (e.g., mydb-mysql.abc123xyz.us-east-1.rds.amazonaws.com)**
* **Connect from EC2 or laptop:**

**mysql -h db-mysql.c0dugqg2m30m.us-east-1.rds.amazonaws.com -P 3307 -u admin -p**

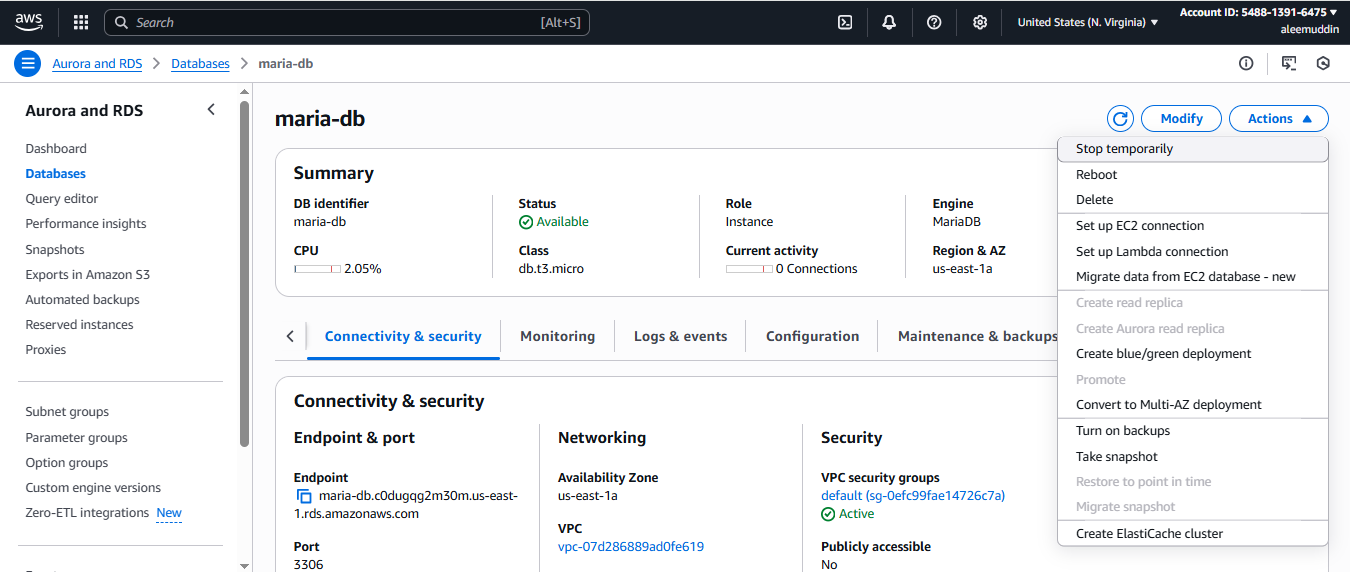
** **

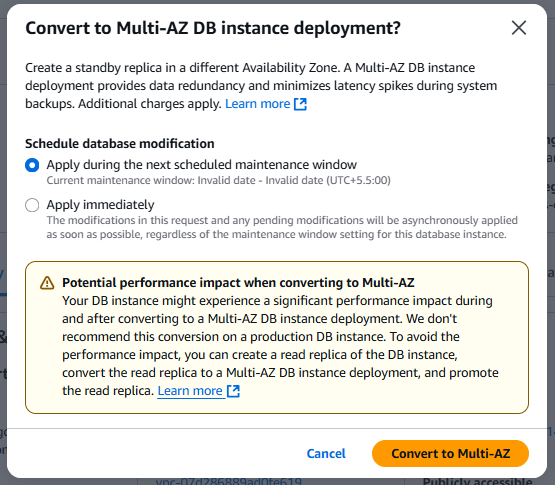
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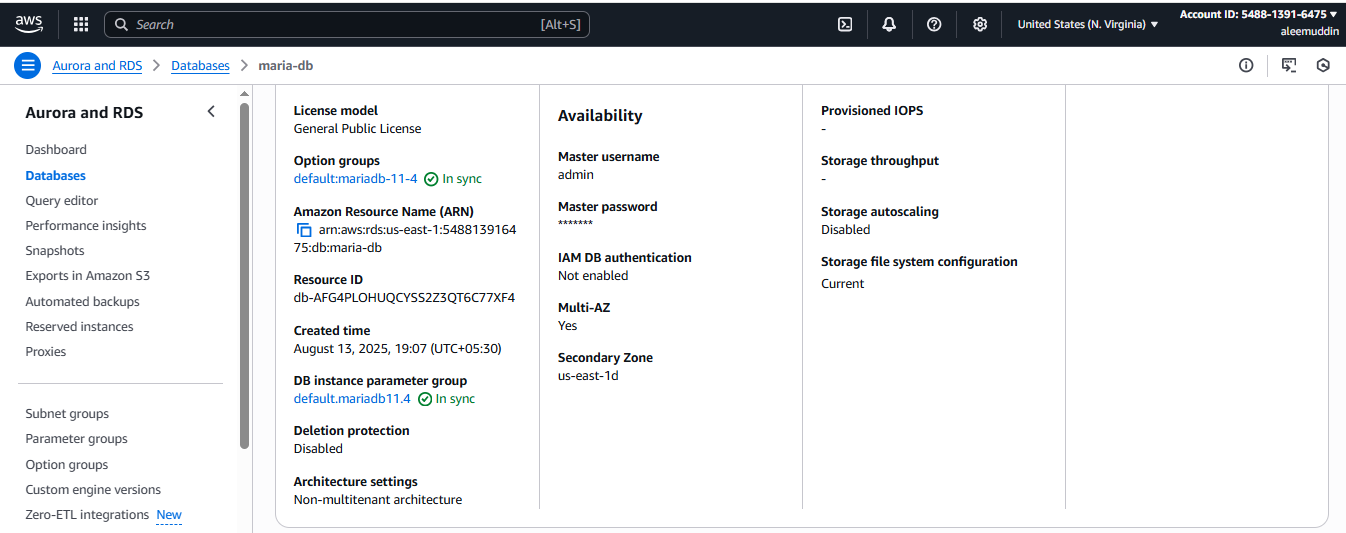
**8) Configure multi AZ**

**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**

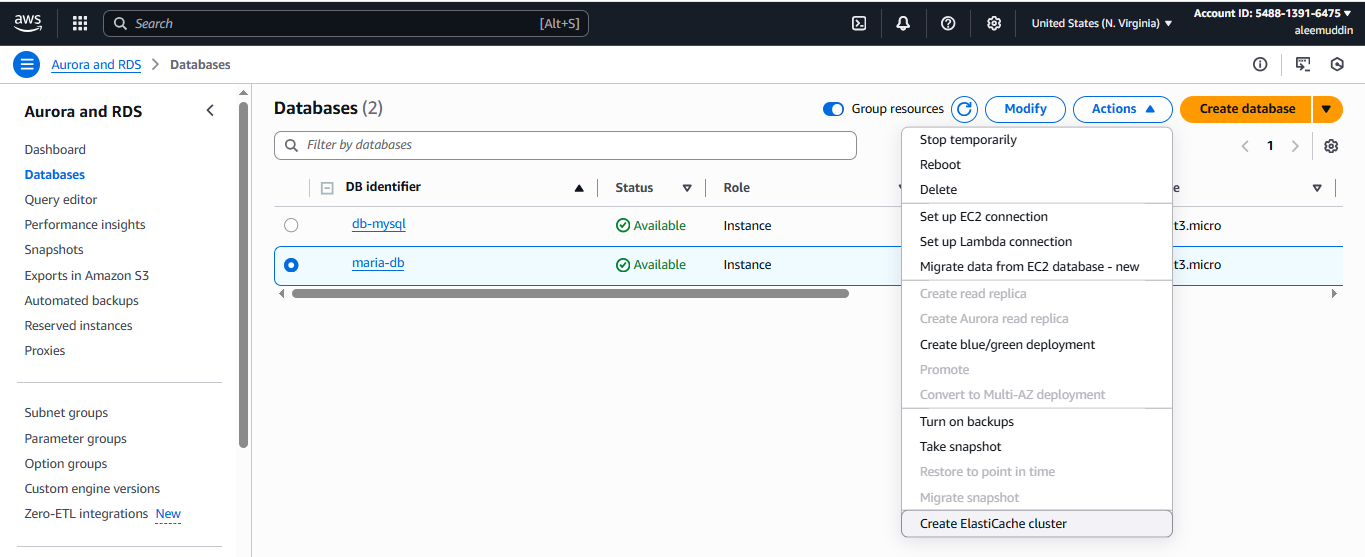
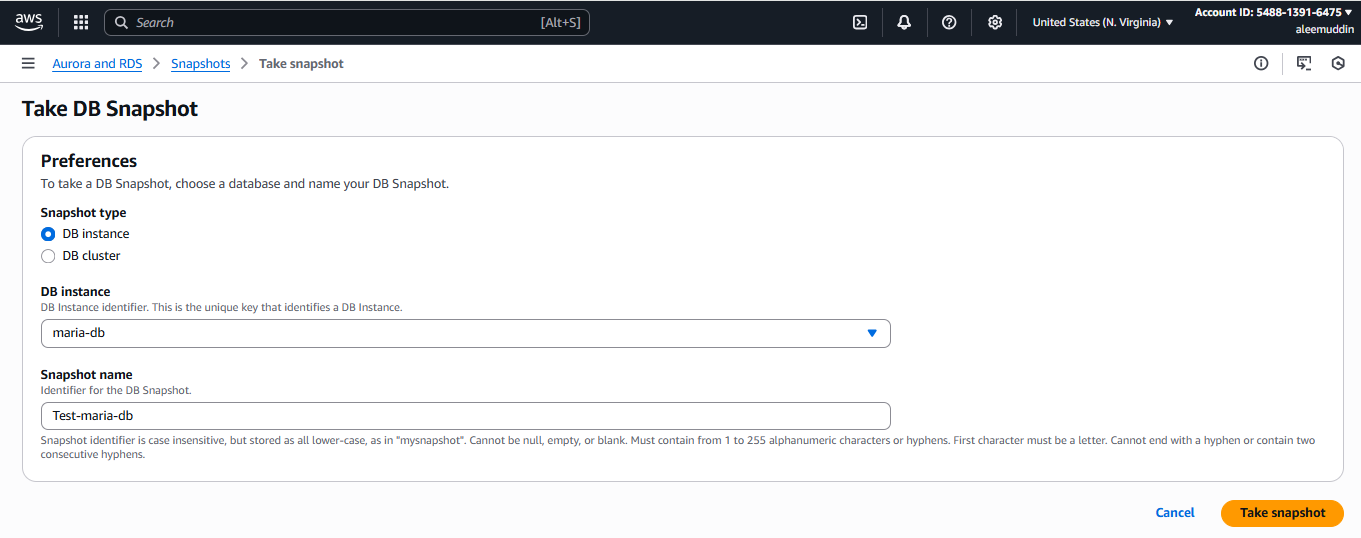
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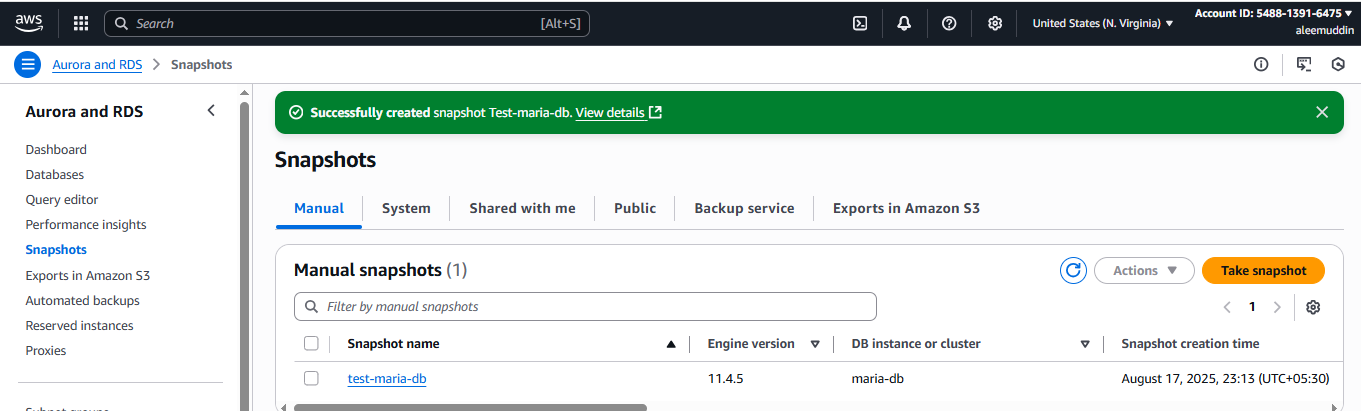
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**9) Take Backup of DB and restore the DB**

**Go to actions → snapshot and name it and create**

** **

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**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.**

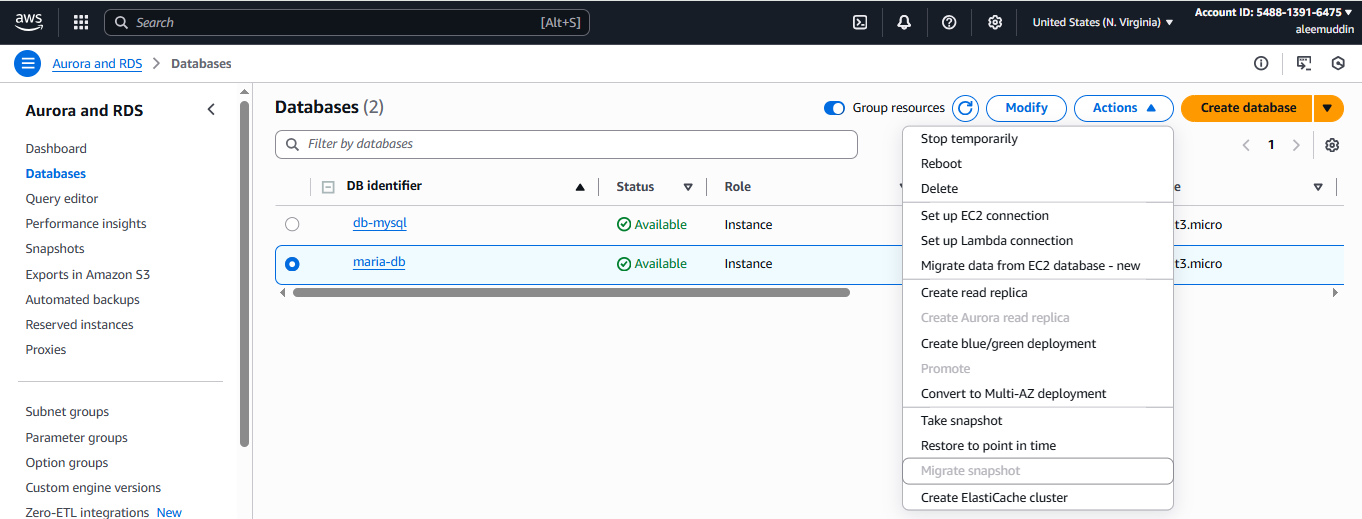
**Settings:**

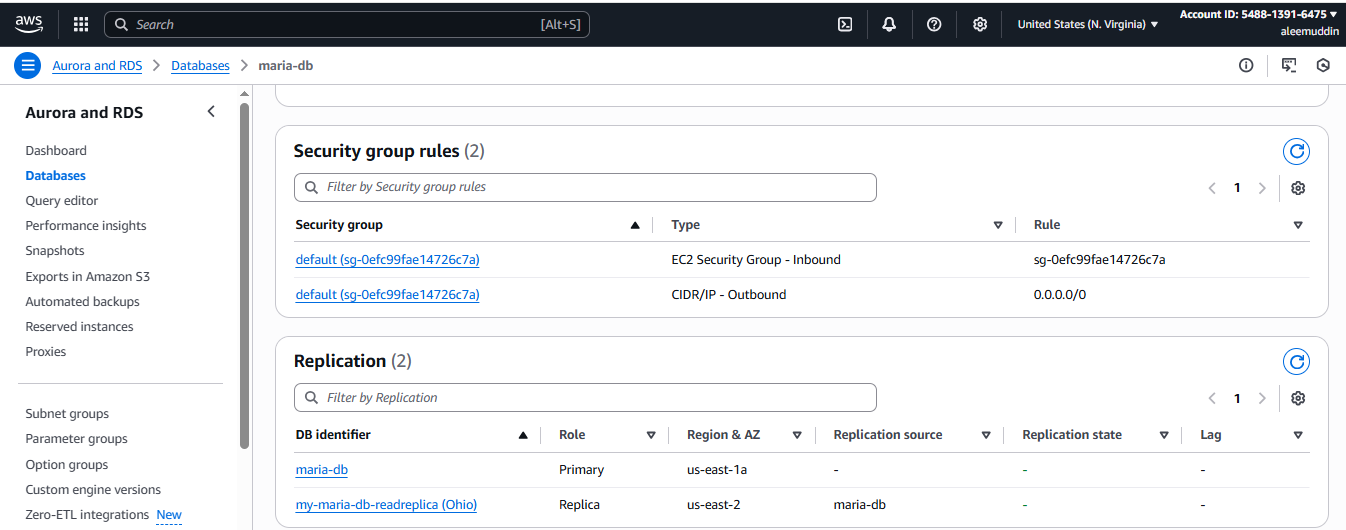
* **DB instance identifier: my-maria-db-readreplica**
* **Optionally choose a different AZ or region (for cross-region).**

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

**Click Create read replica.**

**Wait until status changes to available.**

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