

MySQL to AWS RDS Migration - Cloud Modernization Tutorial

This tutorial demonstrates how to migrate a local MySQL database to Amazon RDS using the AWS Free

Tier.

- Prerequisites
- AWS account (Free Tier)
- MySQL installed locally (`mysql` CLI + `mysqldump`)

Terminal (macOS in this case)

Step-by-Step Tutorial

- Step 1: Create Local MySQL Database

```
CREATE DATABASE company_db;
```

```
USE company_db;
```

```
CREATE TABLE employees (  
  id INT AUTO_INCREMENT PRIMARY KEY,  
  name VARCHAR(50),  
  department VARCHAR(50),  
  salary INT  
);
```

```
INSERT INTO employees (name, department, salary)
VALUES
('Alice', 'Engineering', 95000),
('Bob', 'Marketing', 72000),
('Charlie', 'HR', 65000);
```

- Step 2: Export Local DB

```
mysqldump -u root -p \
--databases company_db \
--single-transaction \
--no-tablespaces \
--set-gtid-purged=OFF \
> company_db.sql
```

- Step 3: Create AWS RDS Instance

- Engine: MySQL 8.x (Free Tier)
- Public access: Yes
- VPC security group: Allow inbound traffic on port 3306
- Master username: admin
- Save the endpoint (e.g., companydb.xxxxx.us-east-1.rds.amazonaws.com)

- Step 4: Import to RDS

```
mysql -h <RDS_ENDPOINT> -P 3306 -u admin -p < company_db.sql
```

- Step 5: Connect and Verify

```
mysql -h <RDS_ENDPOINT> -P 3306 -u admin -p
```

Then run:

```
SHOW DATABASES;
```

```
USE company_db;
```

```
SHOW TABLES;
```

```
SELECT * FROM employees;
```

- Tech Stack

- MySQL

- AWS RDS

- Linux/macOS Terminal

- IAM & Security Groups

- Outcome

Successfully simulated a cloud-native lift-and-shift of a local relational database to AWS RDS.

Validated data integrity with SQL queries post-migration.

- Extra Setup Notes (macOS Homebrew):

If you're using macOS and needed to install MySQL via Homebrew:

Install Homebrew (if not already installed):

```
/bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

Install MySQL 8.0 using Homebrew:

```
brew install mysql@8.0
```

Add MySQL to your PATH (so you can use `mysql` in terminal):

```
echo 'export PATH="/opt/homebrew/opt/mysql@8.0/bin:$PATH"' >>  
~/.zshrc  
source ~/.zshrc
```

Start the MySQL service:

```
brew services start mysql@8.0
```

Log in to MySQL:

```
mysql -u root -p
```

Follow the rest of the migration steps after this.