BUILDING AND INTERACTING WITH OUR OWN DATABASE SERVER

With AWS, we can create our own database and interact with it as well. Today we build one such database. Here we go!!

Reference Diagrams:

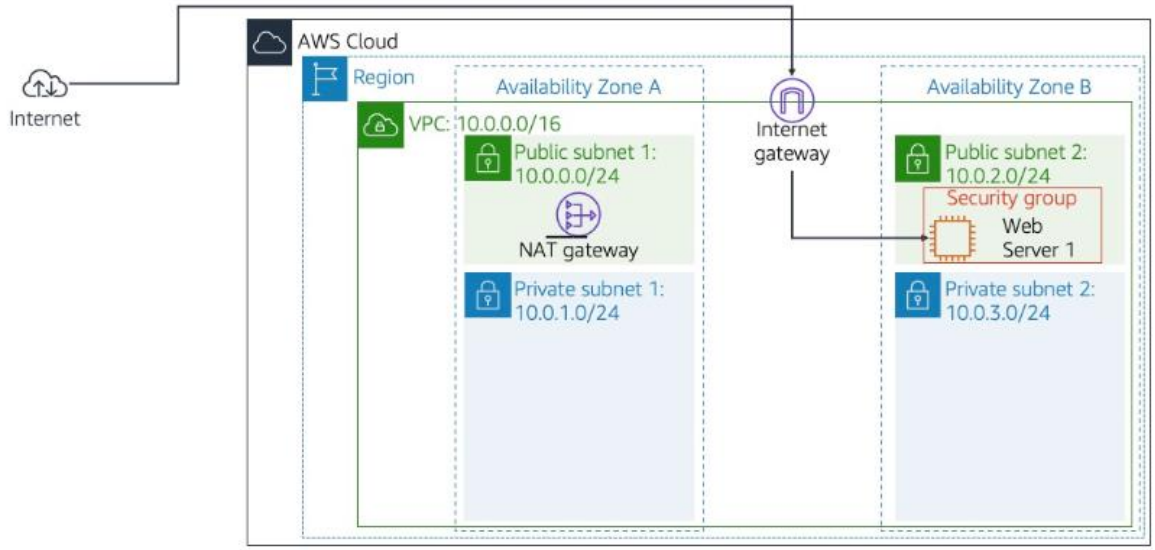


Figure 1. Initial Architecture

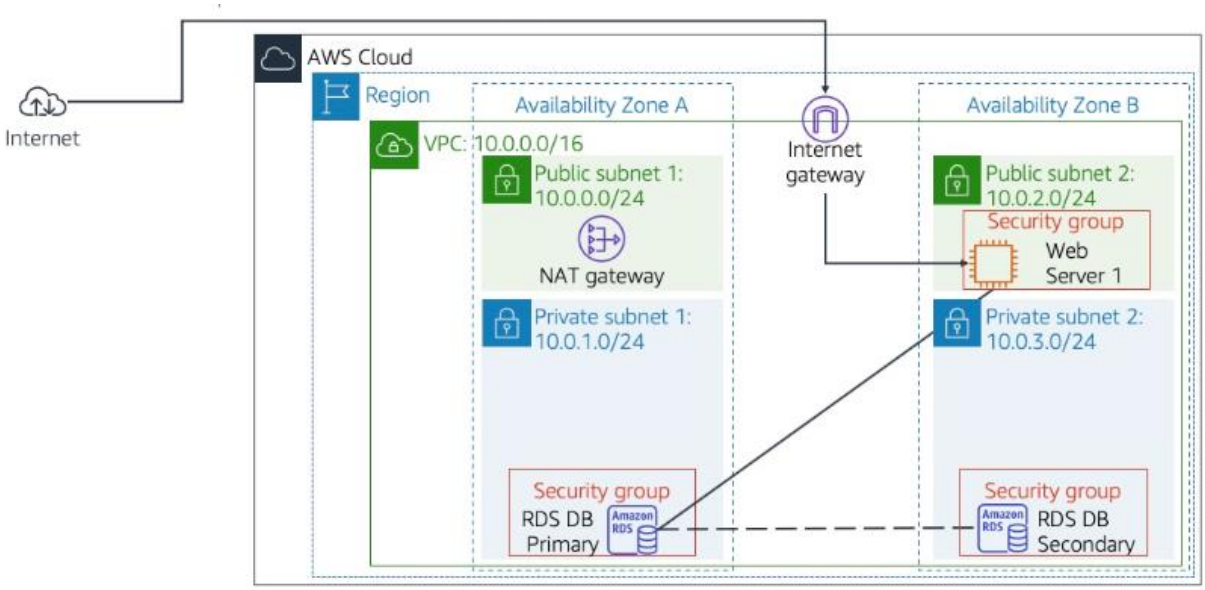


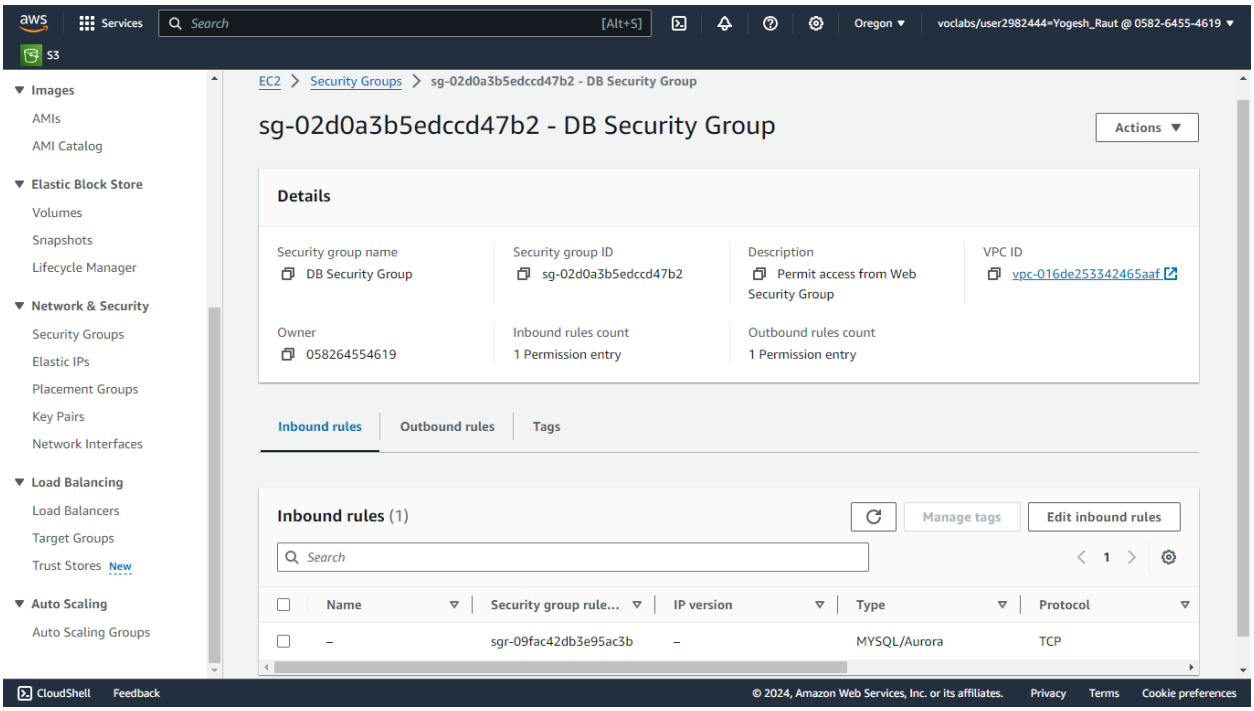
Figure 2. Final Architecture

Step 1. Configuring the prerequisites:

A. Creating Security Group for DB Access:

1. First we need **a security group for our database instance,** so that we could connect to it. So, we search for **VPC** in the Management Console, where we find **Security groups** in the left navigation pane. Here we **configure our Security group** after clicking on **Create Security Group** as follows:

    I. **Security Group Name:** DB Security Group
    II. **Description:** Permit access from Web Security Group
    III. **VPC:** Lab VPC
    IV. In **Inbound Rules > Add rule,** configure as follows:
        i. **Type:** MySQL/Aurora (3306)
        ii. **Source:** Web Security Group
    V. Click on **Create Security Group**.



B. Creating a DB Subnet Group:

1. For a DB Subnet Group, we need to **search RDS in search box** and find **Subnet groups** in the left navigation pane. **Configure the Subnet group** after clicking **Create Subnet group** as given below:

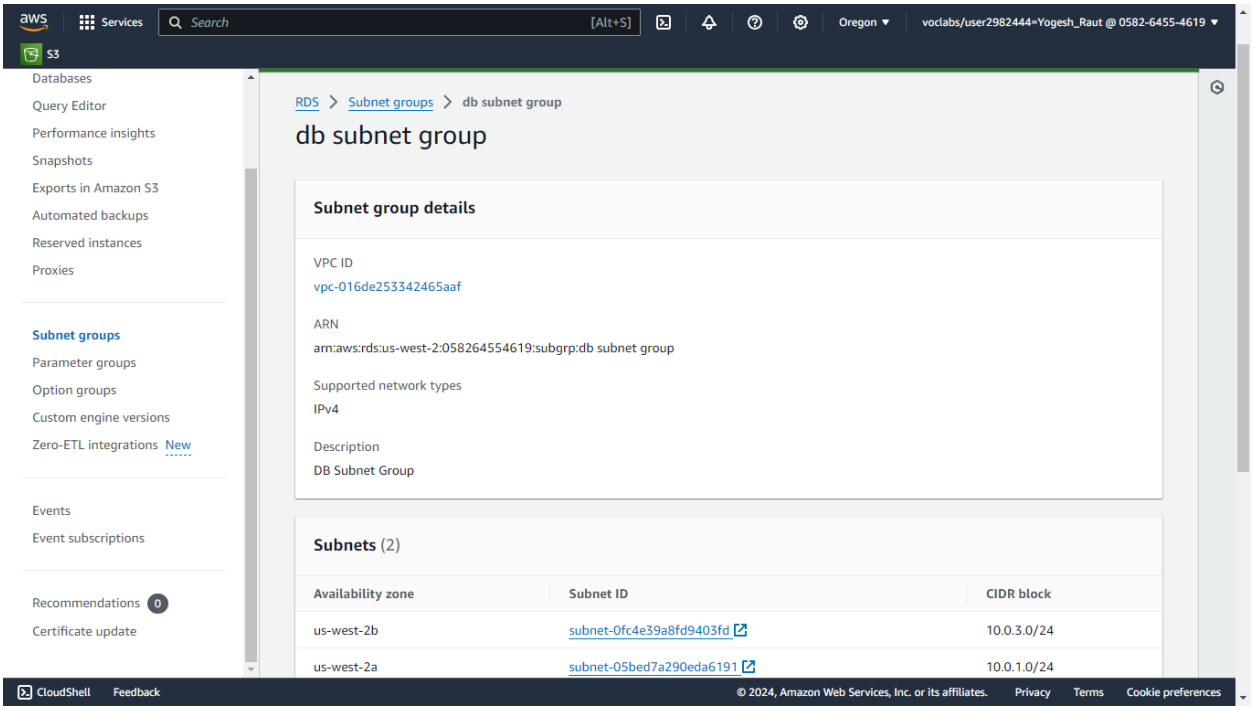
    I. **Name:** DB Subnet Group
    II. **Description:** DB Subnet Group

III. **VPC ID:** Lab VPC

IV. In **Add Subnets** Section for Availability Zones, **check first and second Availability zones.**

V. **Subnets:** For **first AZ, choose 10.0.1.0/24**
For **second AZ, choose 10.0.3.0/24**

VI. Click **Create.**



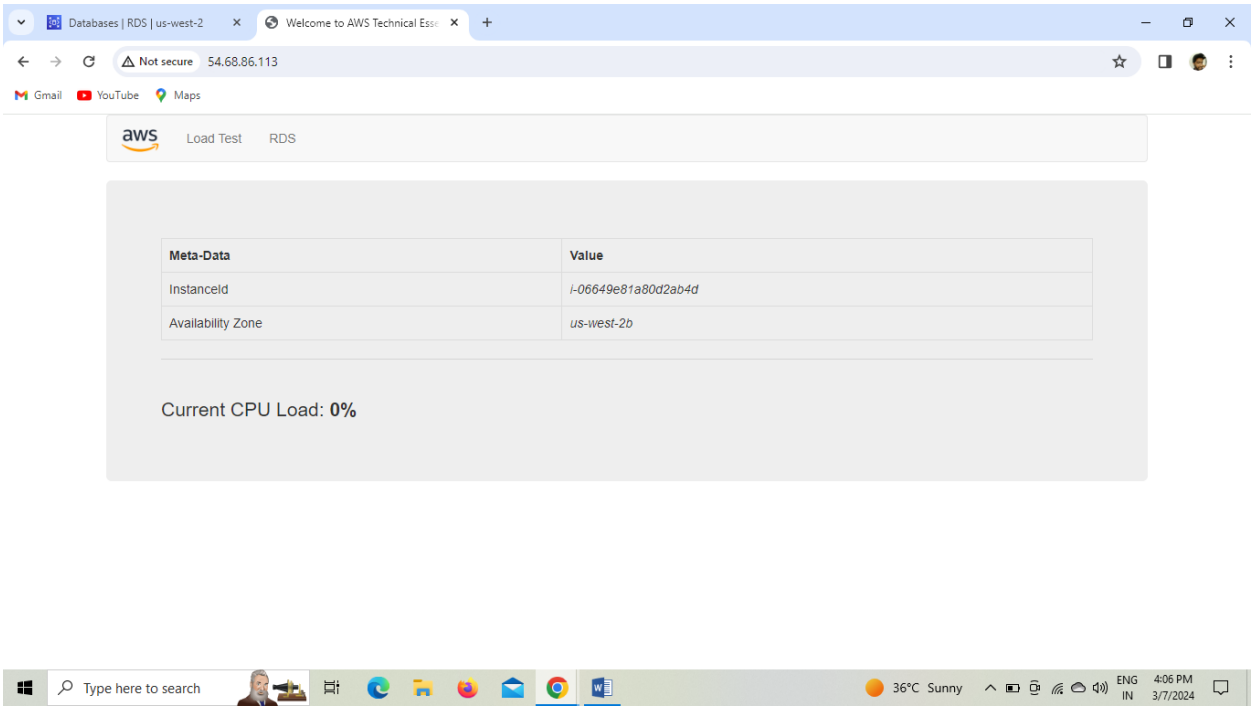
Step 2. Creating an Amazon RDS DB Instance:

1. With prerequisites done, we now **create a database**. Select **Databases** from the left navigation pane and click on **Create database** after which **select Standard Create.**
2. Under **Engine,** choose **Engine Type** as **MySQL.**
3. For **Engine Version,** choose the **latest version.**
4. For **Templates,** choose **Dev/Test.**
5. For **Availability and durability,** choose **Multi AZ DB Instance.**
6. The **Settings** need to be configured as follows:
    I. **DB Instance Identifier:** Test-DB
    II. **Master username:** main
    III. **Master password:** test-password
7. Under **Instance Configuration,** choose **DB Instance class** as **Burstable classes** and **t3.medium.**
8. Choose **General Purpose (SSD)** in **Storage type.**
9. Under **Connectivity**, configure **VPC** as Lab VPC.

10. Under **VPC Security group,** select **choose existing VPC Security group** where select **DB Security Group** removing the default one.
11. Under **Monitoring,** Expand **Additional Configuration** and **uncheck Enable enhanced monitoring.**
12. Under **Additional Configuration,** configure as follows:
    - **Initial database name:** test
    - **Uncheck Enable automated backups** under **Backups.**
13. Click **Create database** at the bottom.
14. Wait for **Database Status** to turn **Available.**
15. Once database is available, **click on the database name** and **copy the endpoint** from **Connectivity & Security** section.

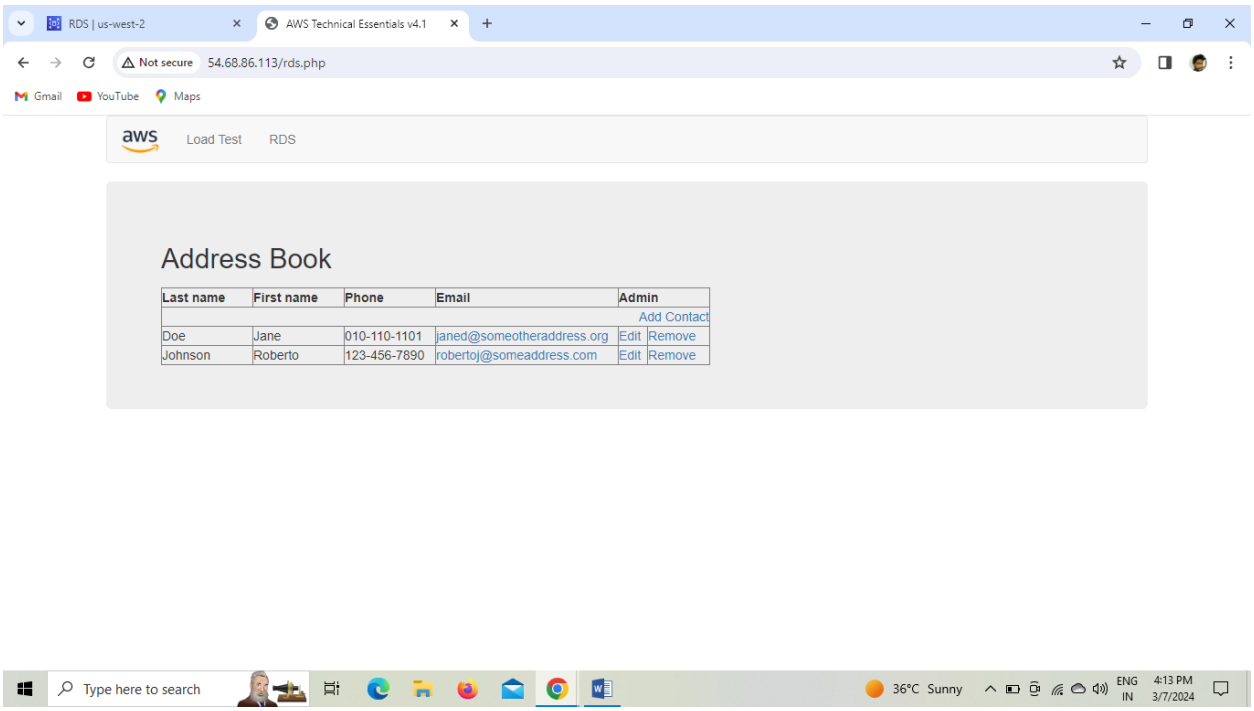
Step 3. Interacting with the Database:

1. To interact with your database, **copy and go to the Public IP of your EC2 Instance** to get the following interface.



2. Now **click on RDS and give required credentials**, after which you'll **get access to your database**. Given below are the configurations:

    I. **Endpoint:** Paste the Endpoint you copied.
    II. **Database:** test
    III. **Username:** main
    IV. **Password:** test-password



As you can see, there is an address book in the database. You can play around however you want.