Cloud Plus Plus Services

Configure Amazon RDS with MySQL engine and establish connection from an EC2 instance.

Objectives:

1. Learn RDS and deploy MySQL database engine using RDS service.
2. Test RDS/MySQL database connection from EC2 instance.

Step 1: In **EC2** service console, go to Security groups in side panel. Click on Create security groups.

Create a Security Group for Linux Server with following configuration:

Security group name: LinuxSG

Description: Security Group for Linux Server

Type: SSH

Source:0.0.0.0/0

Click on Create security group button in bottom right corner. Confirm that it is created.

Go back to **EC2** service console, go to Security groups in side panel. Click on Create security groups.

Provide **Security group name** as RDS-SG.

Provide **Description** as Security Group for Database.

Provide following Inbound rules:

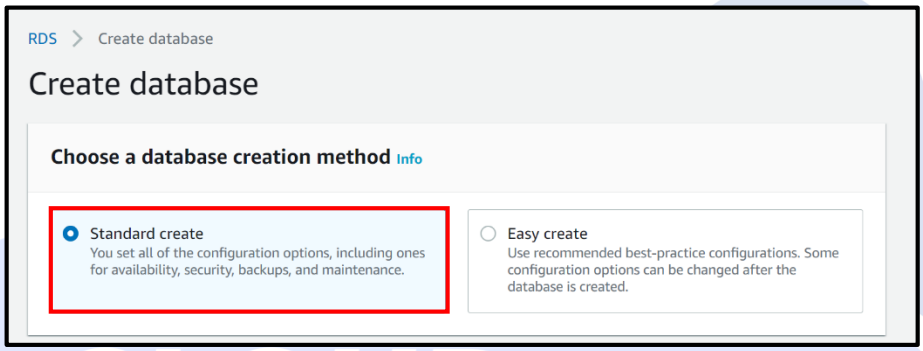
1. **Type**: SSH
   Source:0.0.0.0/0
2. **Type**: MySQL/Aurora
   Source: LinuxSG (security group that would be used to create the EC2 instance)

Type	Protocol	Port range	Source
SSH	TCP	22	0.0.0.0/0
MYSQL/Aurora	TCP	3306	sg-0a543e89ae24da77e (LinuxSG)

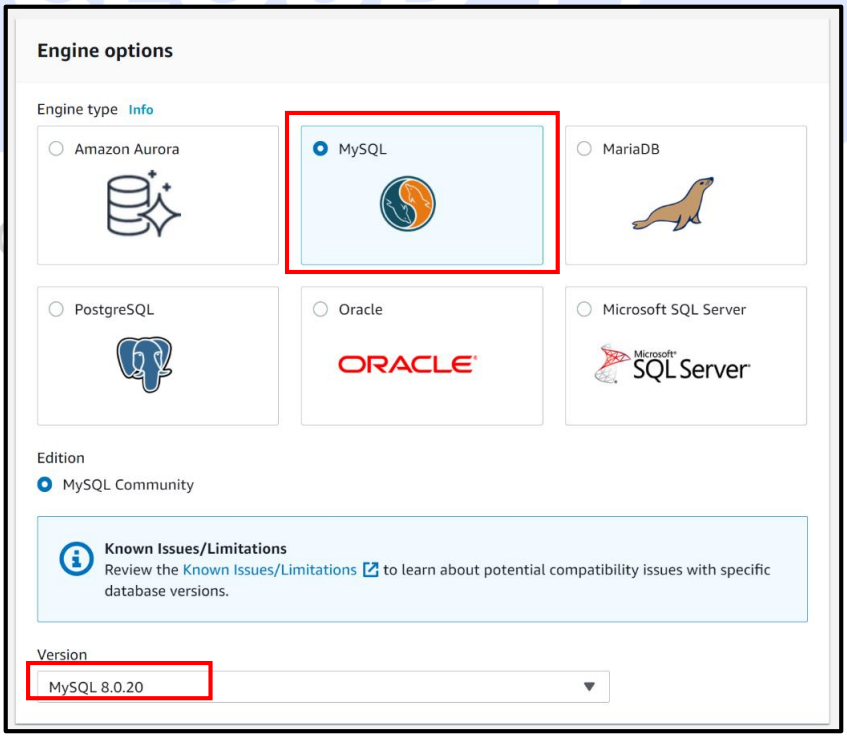
Click on Create security group button in bottom right corner. Confirm that it is created.

Step 2: Go to RDS service console. Click on Create database.

Choose a Standard create **database creation method**.



Select the MySQL radio button in **Engine options**. Confirm **MySQL 8.0.20**



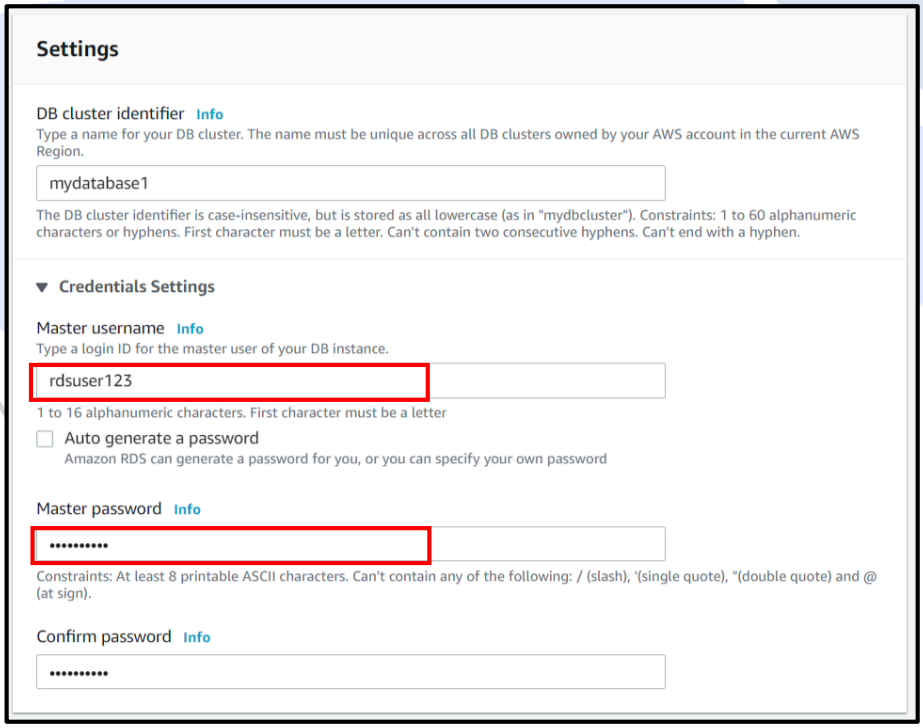
Select the Dev/Test in **Templates**.

Under **Settings**:

Give **DB instance identifier** as mydatabase1.

Provide **Credentials Settings** as per your choice and store it in a secure place. We refer to following values for this document:

- Master Username: rdsuser123
- Master password: rdspass123



Let the **DB instance class** be Standard Classes and **size** be db.m5.xlarge.

Confirm the default **Storage** settings as **Storage type**: General type- General Purpose (SSD) and **Allocated storage** 20 GiB.

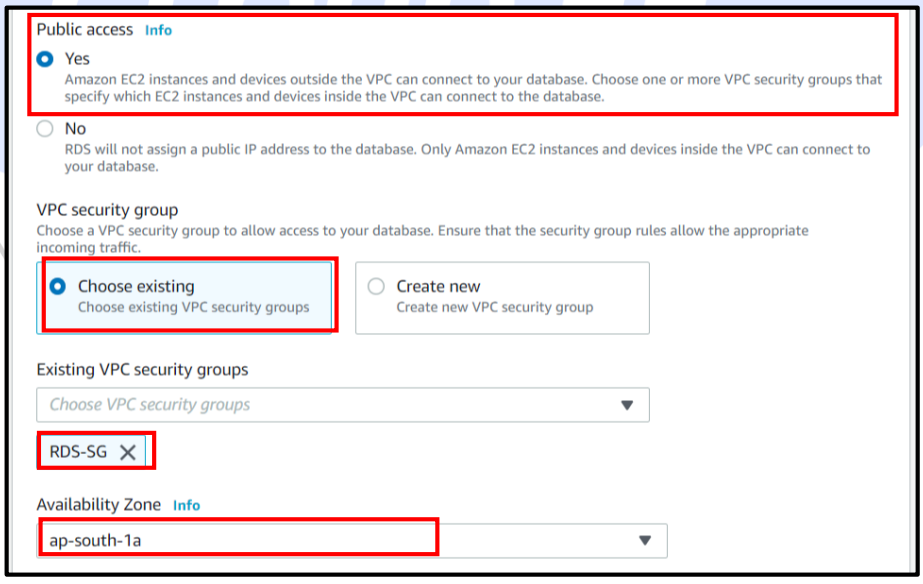
Uncheck the Enable storage autoscaling.

Under **Availability & durability** select Do not create a standby instance radio button.

Connectivity section will have Default VPC selected.

Click on **Additional connectivity configuration** for drop down.

- Select default-vpc Subnet group.
- Select Yes radio button under **Public access**.
- Select Choose Existing radio button in **VPC security group**.
- In the **Existing VPC security groups** default will be selected. Remove this security group by clicking on the **cross** sign. Select the RDS-SG created in previous step.
- In **Availability Zone** select 1a which should be **same as the AZ of Linux Instance**.
- The **Database port** will be default 3306.

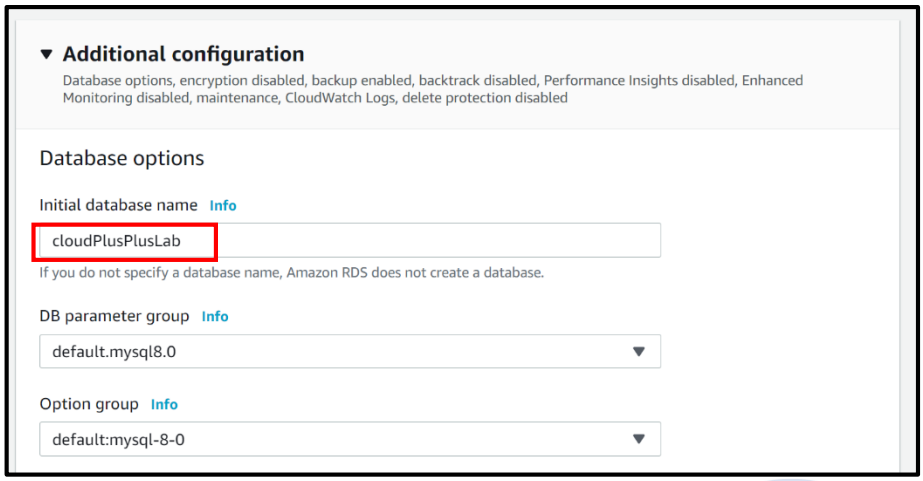


Database authentication is set to Password authentication.

Click on **Additional configuration** drop down.

Provide **Initial database name** as cloudPlusPlusLab.

DB **parameter group** and **Option group** will be default mysql8.0.



In **Backup** the Enable automatic backups will be checked.

Backup retention period will be 0 days.

Backup window will have No preference selected.

Uncheck Copy tags to snapshots.

Uncheck Enable Encryption.

Uncheck Enable Performance Insights.

Uncheck Enable Enhanced monitoring.

Uncheck all options under Log Exports.

Uncheck Enable auto minor version upgrade.

Select No preference for **Maintenance window**.

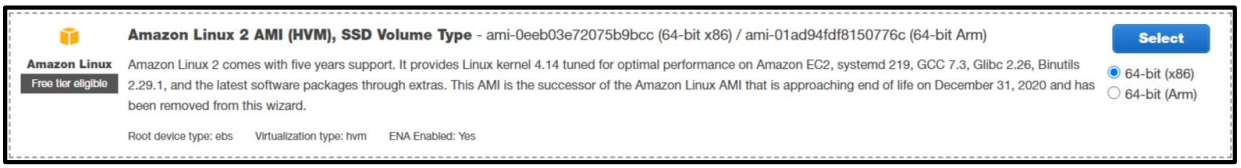
Uncheck Enable deletion protection.

Ensure no additional cost is being incurred in the **Estimated monthly cost** section.

Click on Create database button in bottom right corner.

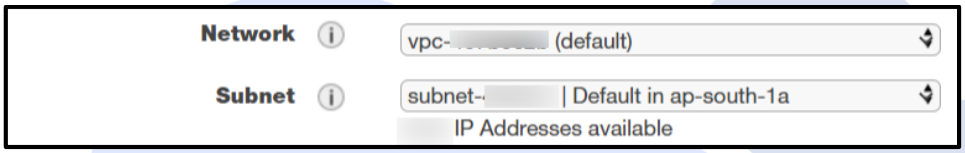
Confirm that the database is created and Available.

Step 3: Go to **EC2** in AWS Console. Click on Launch Instance. Select the **Linux2 AMI**.

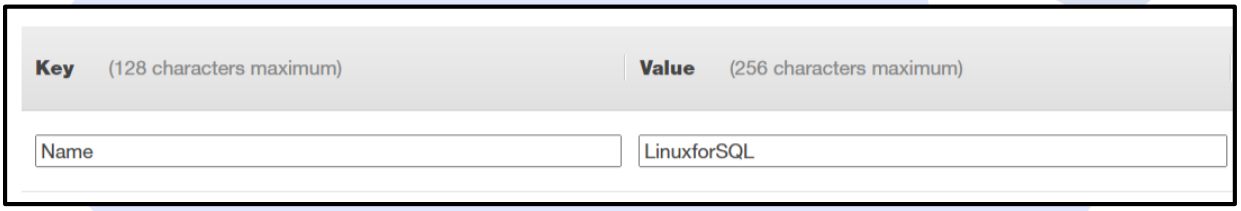


In **Step 2: Choose an Instance Type** keep the default **t2.micro** and go to next step.

In **Step 3**, select a subnet same as the one in which RDS is created. In our case we select ap-south-1a.



Keep the defaults for **Step 4: Add Storage**. And go to Step 5. Provide the **Key** as **Name** and **Value** as **LinuxForSQL**.



In **Step 6** select the **existing** Linux Server Security Group LinuxSG created earlier in this exercise. For more information refer to our blog in Linux Server Configuration here. **Review, acknowledge the Key-pair** and **Launch** the Instance. Make sure it is running.

Step 4: SSH into the instance.

Run the following command to establish root user access:

sudo su

Run the next command to install mysql on your instance:

yum install mysql

During installation, you would be prompted at following screen. Type Y and press **Enter** to proceed.

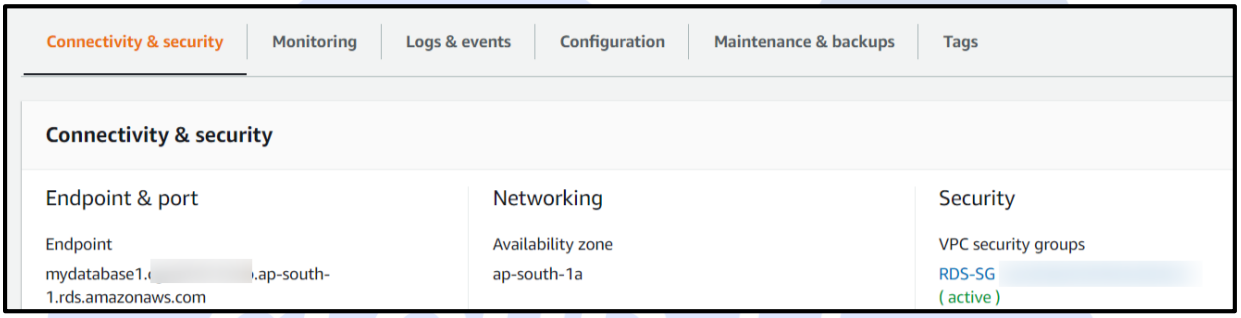
```
Total download size: 8.8 M
Installed size: 49 M
Is this ok [y/d/N]: y
```

The installation will be complete.

```
Installed:
  mariadb.x86_64 1:5.5.68-1.amzn2

Complete!
```

Go to RDS in console, click on your RDS instance and copy the endpoint.



Run the following command in SSH where the blue part will be replaced by your end point and user name:

mysql --user rdsuser123 --password --host mydatabase1. .ap-south-1.rds.amazonaws.com

You will be prompted to enter password in which you enter the password provided during creation of RDS instance:

```
[root@ip-172-31-13-46 ec2-user]# mysql --user rdsuser123 --password --host mydatabase1.
    .ap-south-1.rds.amazonaws.com
Enter password:
```

If the command, endpoint and password is entered correctly, the following will be prompted.

```
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 8.0.20 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MySQL [(none)]>
```

Run the following SQL queries to test the database, here the blue part will be replaced by your database name that was provided during creation of RDS instance:

```
CREATE TABLE cloudPlusPlusLab.employee (firstname text, lastname text, phone text);

INSERT INTO cloudPlusPlusLab.employee VALUES ("Harry", "Potter", "123-4567");

INSERT INTO cloudPlusPlusLab.employee VALUES ("Virat", "Kohli", "987-6543");

SELECT * FROM cloudPlusPlusLab.employee;
```

```
MySQL [(none)]> SELECT * FROM cloudPlusPlusLab.employee;
+-----------+----------+----------+
| firstname | lastname | phone    |
+-----------+----------+----------+
| Harry     | Potter   | 123-4567 |
| Virat     | Kohli    | 987-6543 |
+-----------+----------+----------+
2 rows in set (0.00 sec)
```

Thus we have successfully established connection with RDS using the Linux EC2 Instance.

Note: Delete RDS instance, Security groups and terminate the instances if you no longer need them.

Was this document helpful? YES / NO

Document Created by	Version
Parag Deshpande	10-March-2021