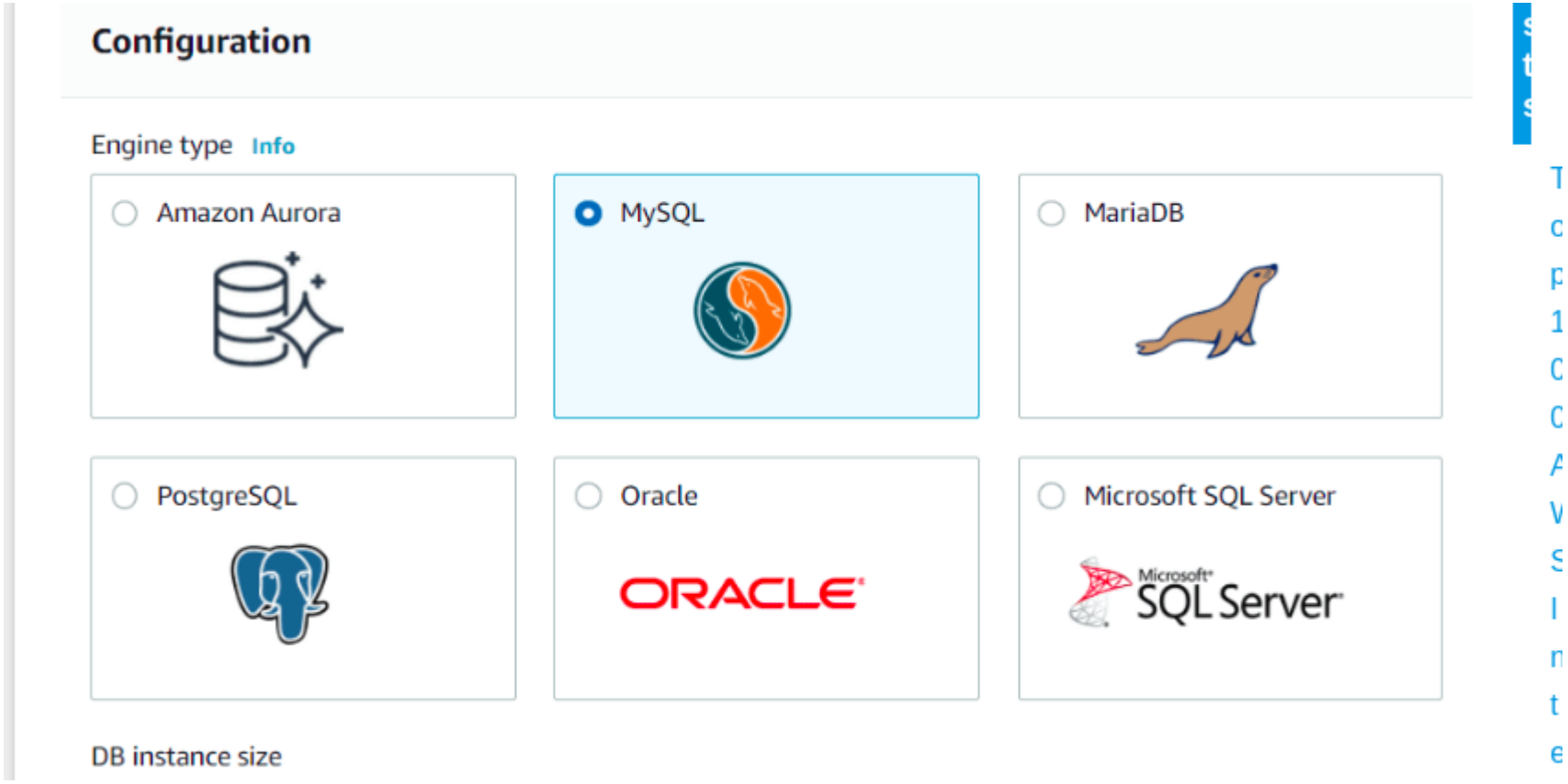
Day 44: Relational Database Service in AWS

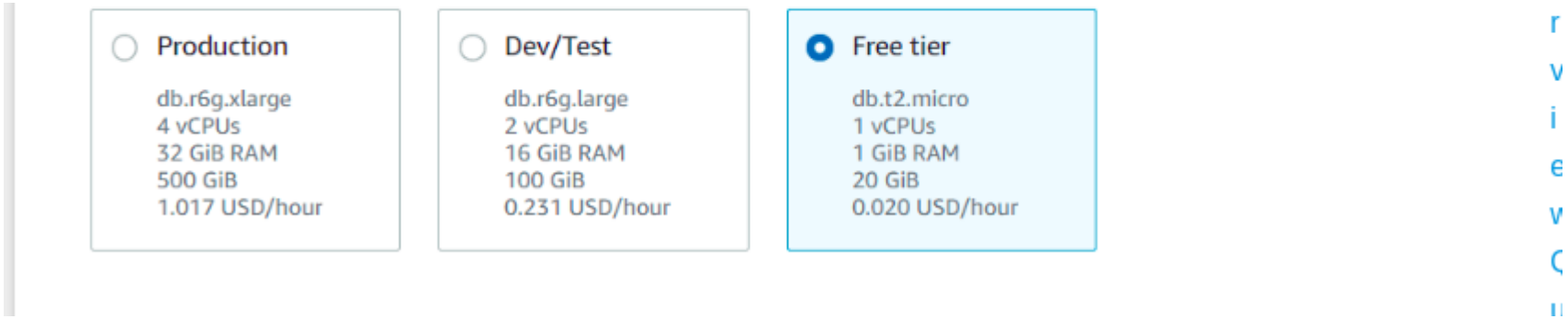
Maninder Singh

Dear Learners, In Today's article we will explain Amazon Relational Database Service (Amazon RDS) that how RDS work,definitions & Tasks. So now let's start without wasting the time.

RDS:-

Amazon Relational Database Service (Amazon RDS) is a collection of managed services that makes it simple to set up and scale database in the cloud.





Relational Database in AWS Types flow Diagram

I will Explain with the help of Tasks:

Prerequisites:-

Task-01

Login to your Amazon Account with username and Passoword.

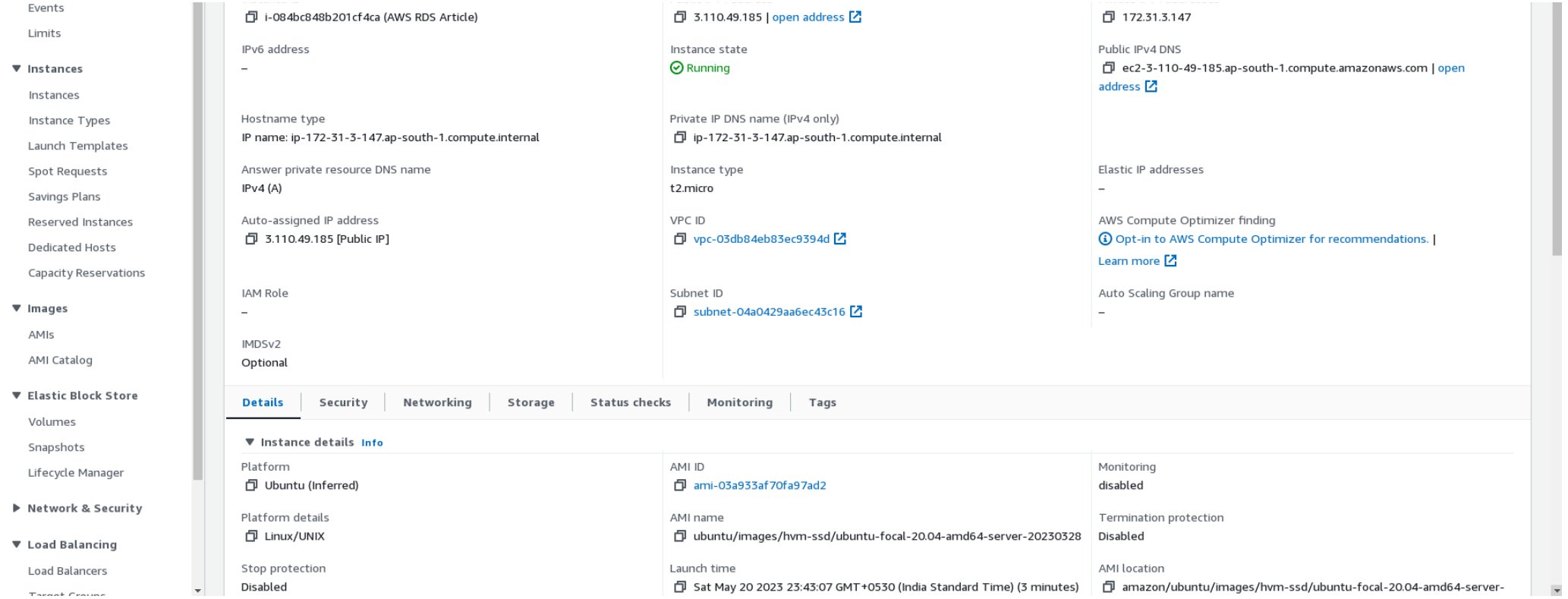
Go to the Amazon EC2 console.

Click on "Launch Instance" on the right side of page. Highlight in orange colour.

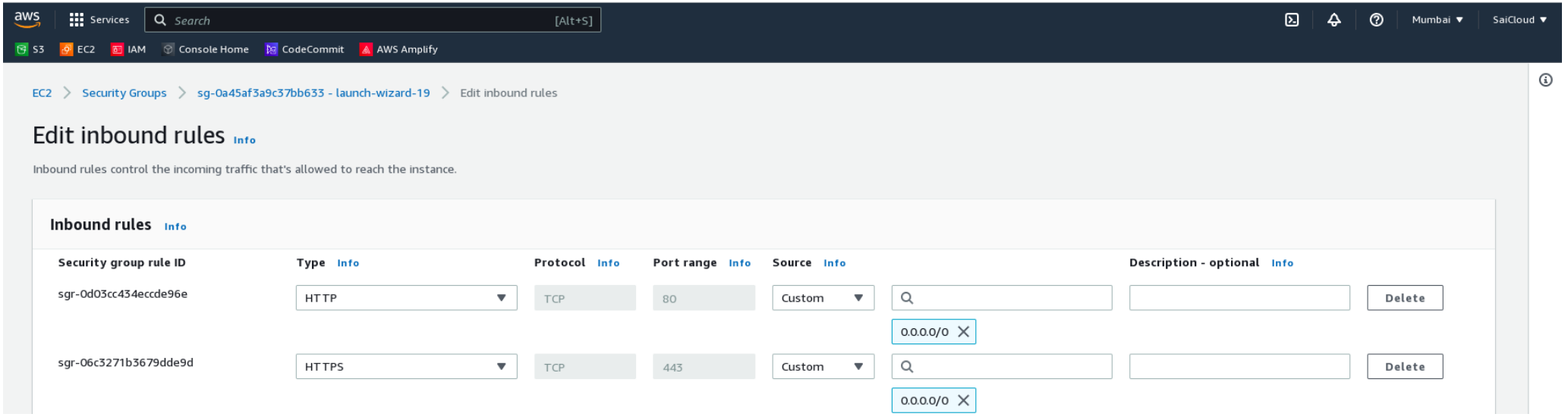
Choose a "Linux AMI", give a name to your Ec2 instance.

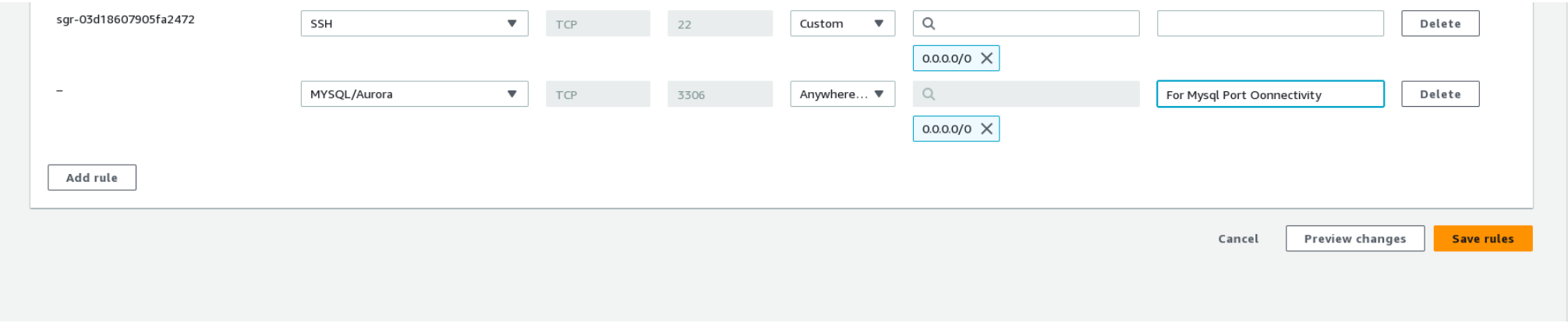
Choose an instance type according to your need, I have select the t2.micro.

Configure the Security group rules to allow inbound traffic on the Appropriate port for the type of database you are using (e.g port 3306 used for the MySQL).



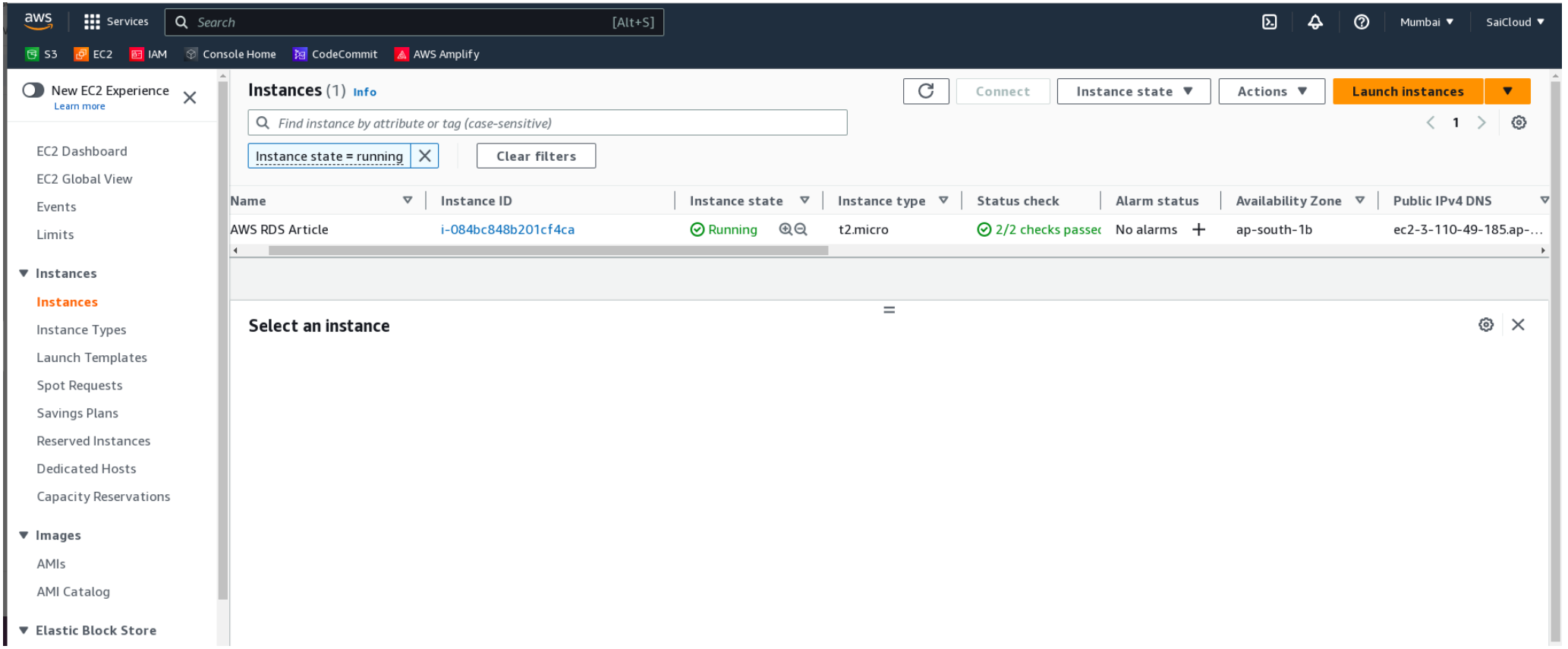
Choose an instance type according to your need, I have select the t2.micro Diagram





In Our Security Group, I will allow the port 3306 used for the MySQL

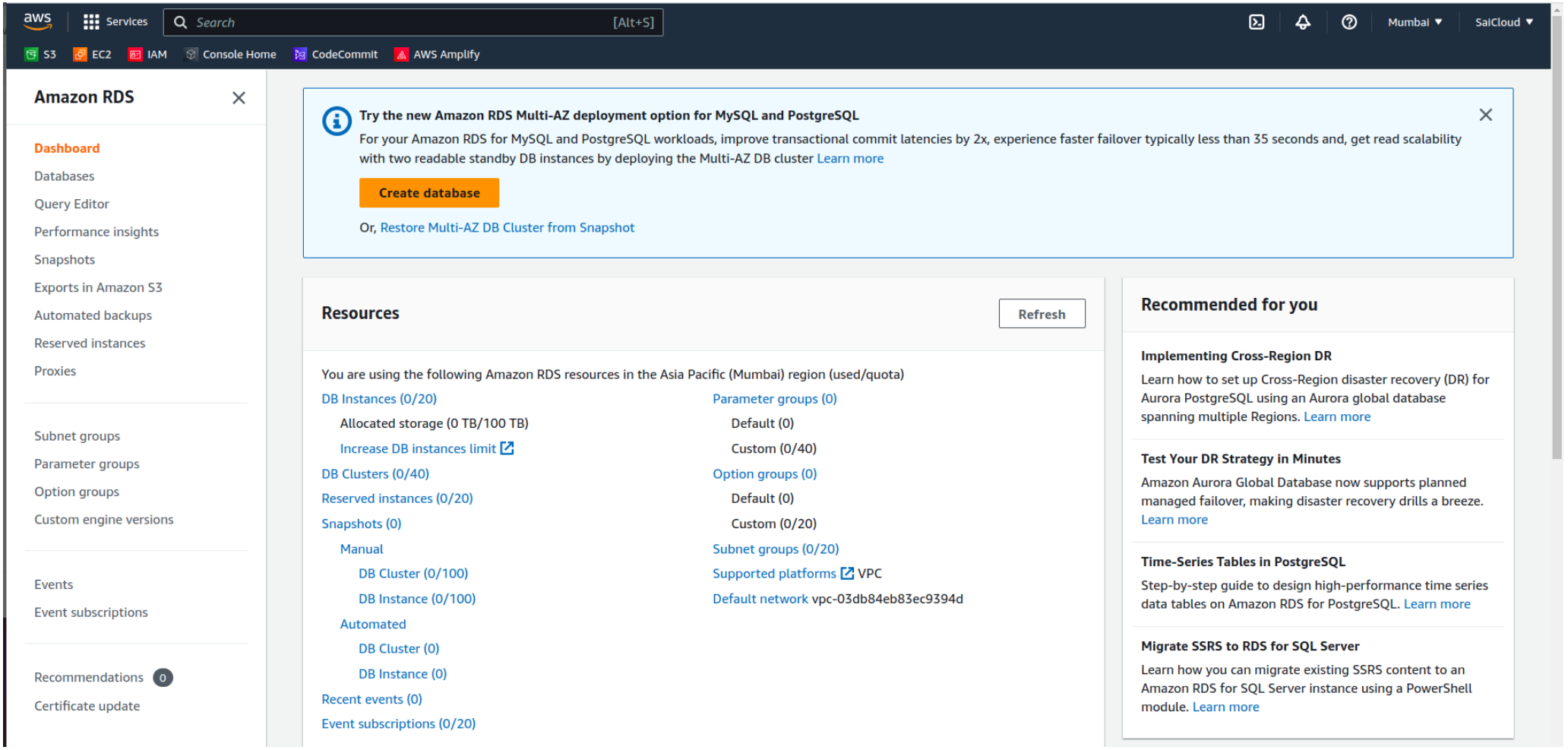
Launch the instance.

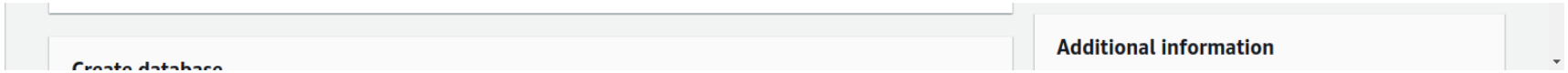


Launch the instance mention a tag on your isntance Diagram

2 Create a Free tier RDS instance of MYSQL.

Go to the Amazon RDS console. Click on "Create Database option" highlight in orange colour.





Click on "Create Database option" highlight in orange colour Diagram

In the Database creation method choose the Standard Create.

In Engine option:- I will select the MySQL, you can select according to your need like:- MariaDB, Oracle & PostgreSQL etc.

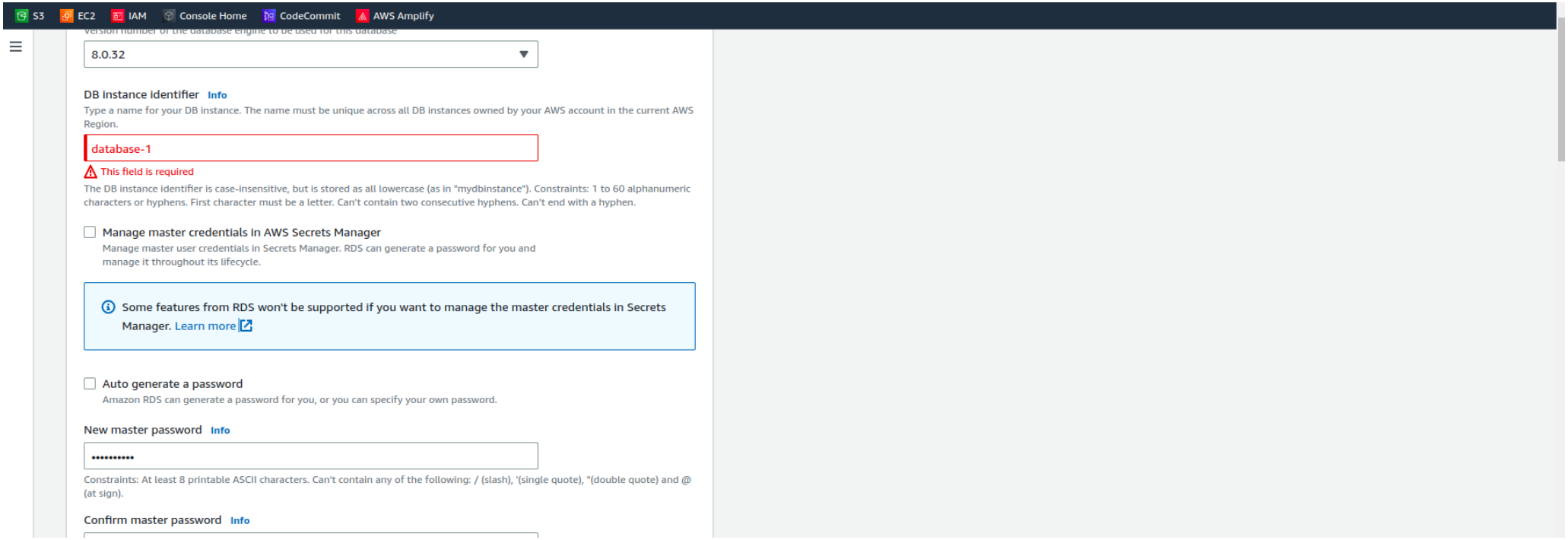
choose the Standard Create select the MySQL Diagram.

Choose the "Free tier" template for "DB instance class" no charges for the "free tier"

Choose the "Free tier" template for "DB instance Diagram.

Next Step:- Enter a unique name for the "DB instance identifier".

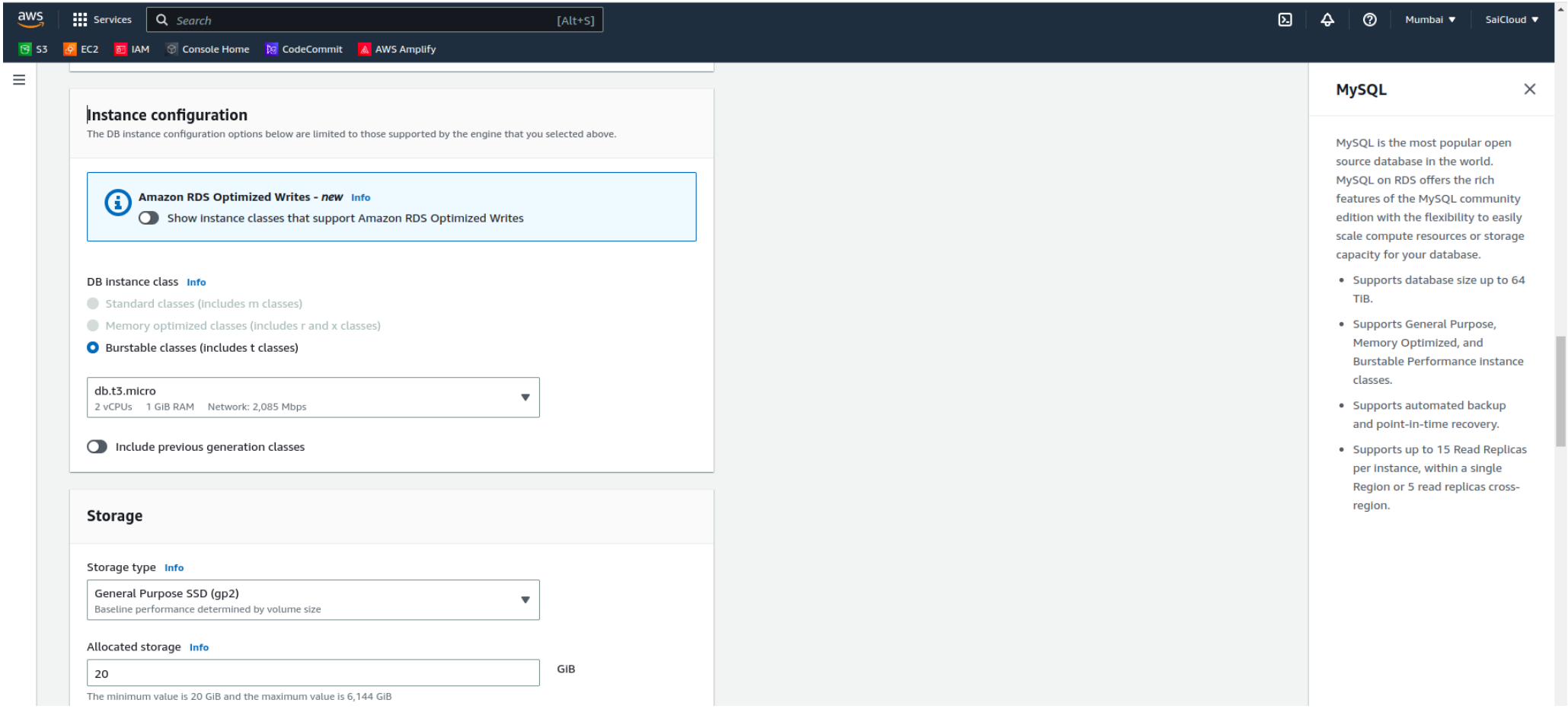
Set the "Master username" & "Master Password" for the database, It will used while login the database from the terminal, I will explain in it in Today Task.



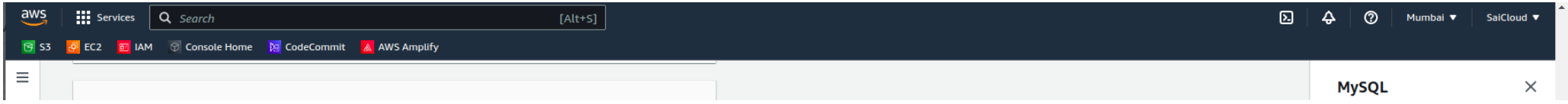
Enter a uniqu e name for the "DB instance Set the "Master username" & "Master Password" Diagram.

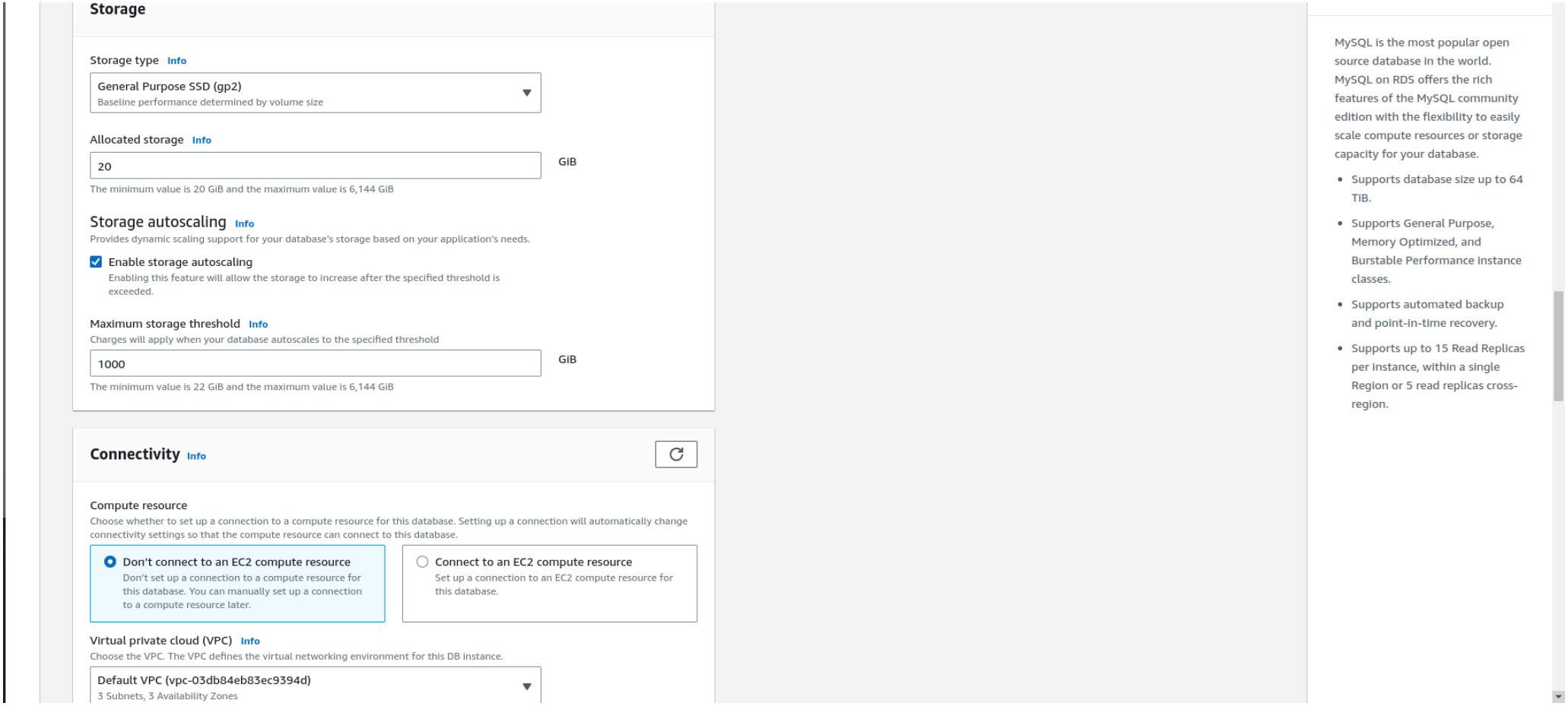
Set the "Virtual Private Cloud" and "Subnet group" to create the instance in.

Leave the other settings at their default values.



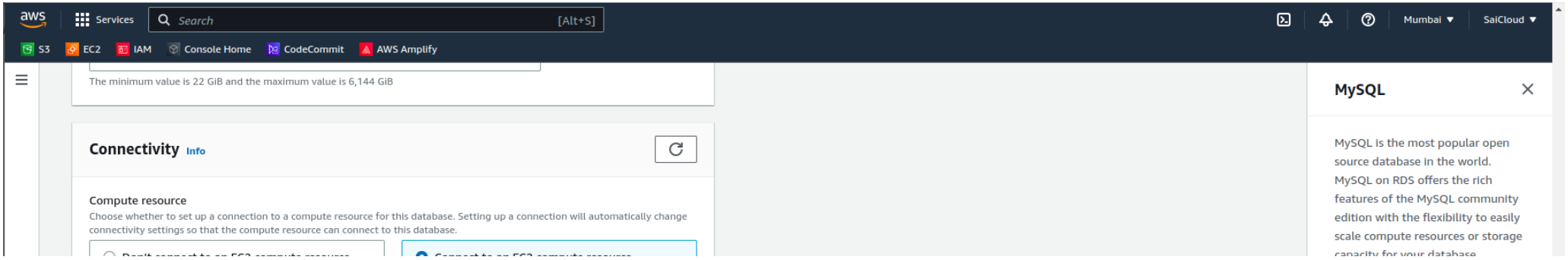
"Virtual Private Cloud" and "Subnet group" Diagram.

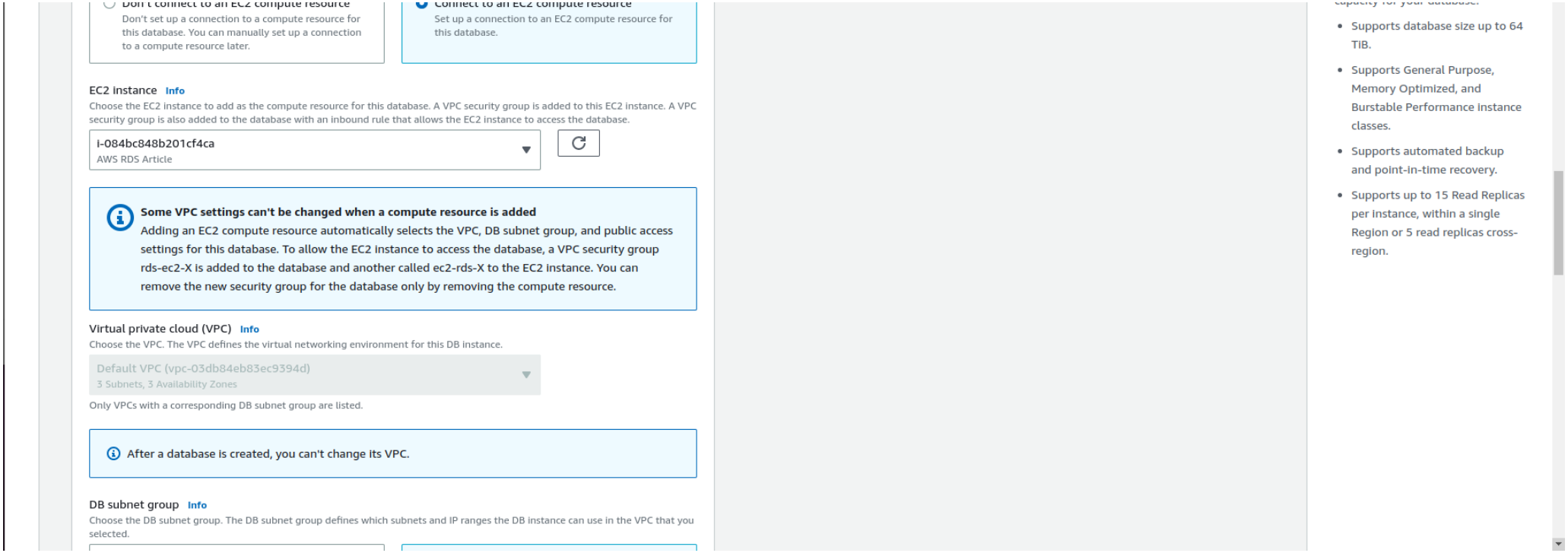




Select the Storafe Type Diagram.

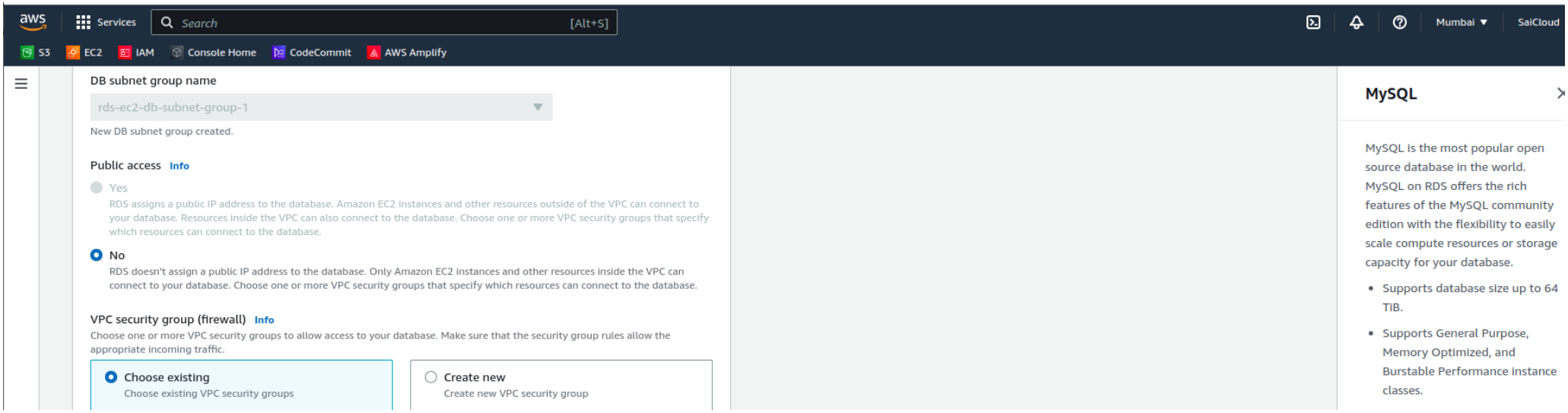
Select EC2 instance.

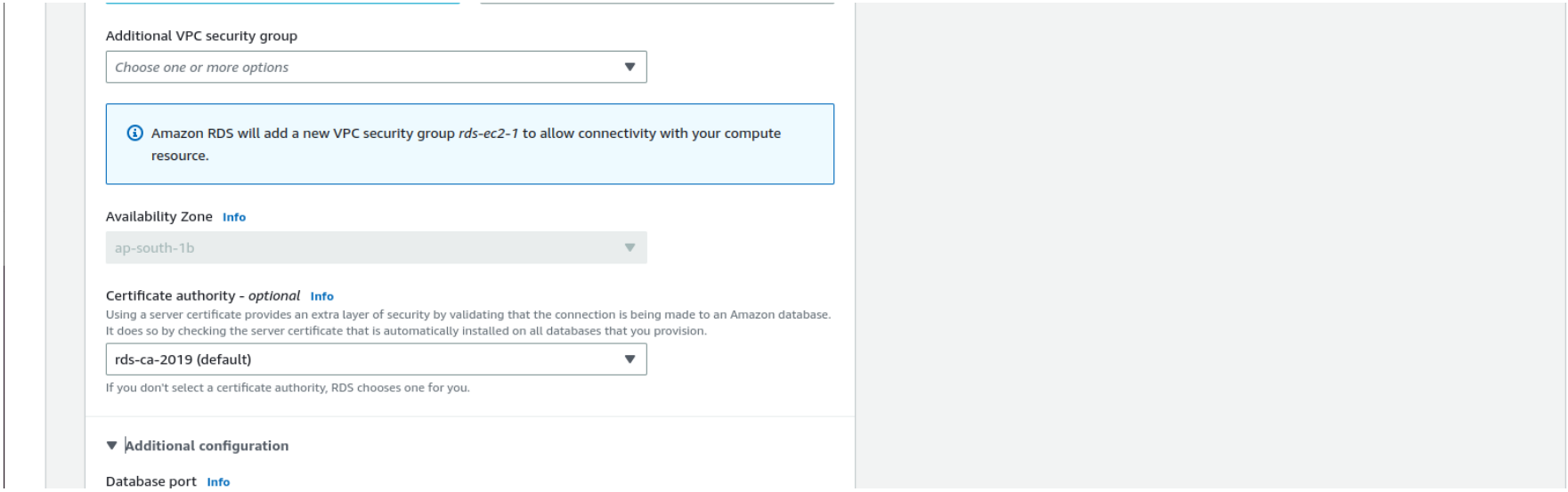




Select EC2 instance Diagram.

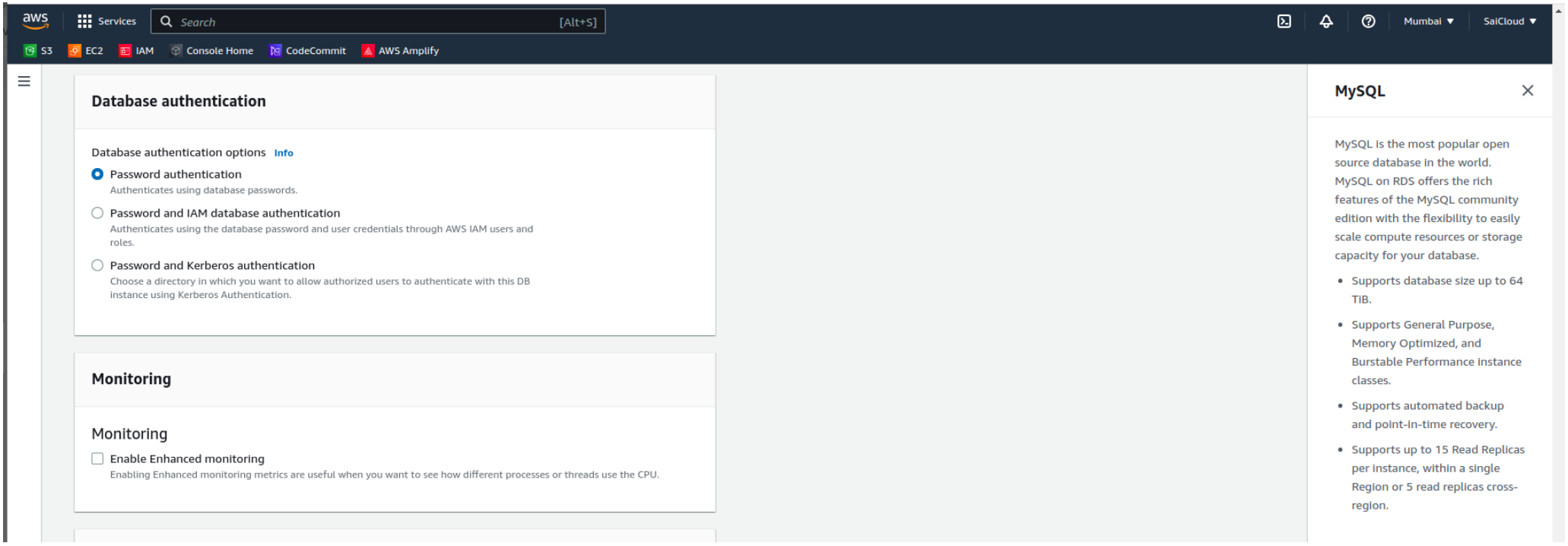
Choose VPC Security Group:-

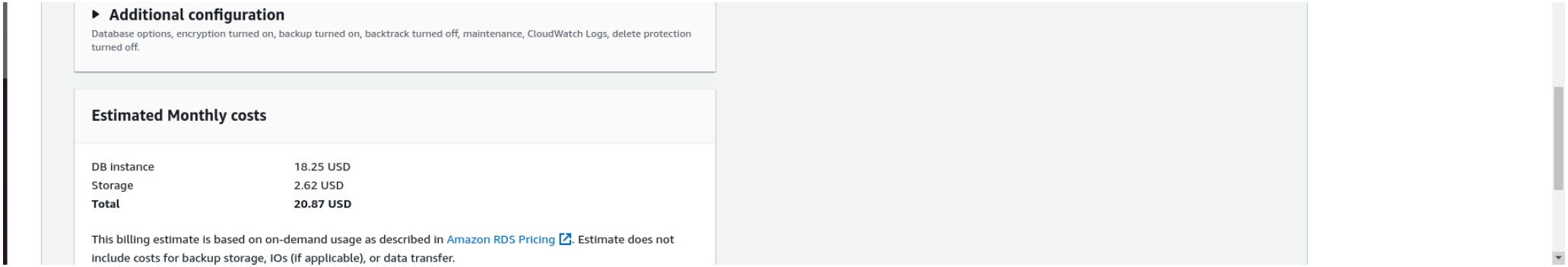




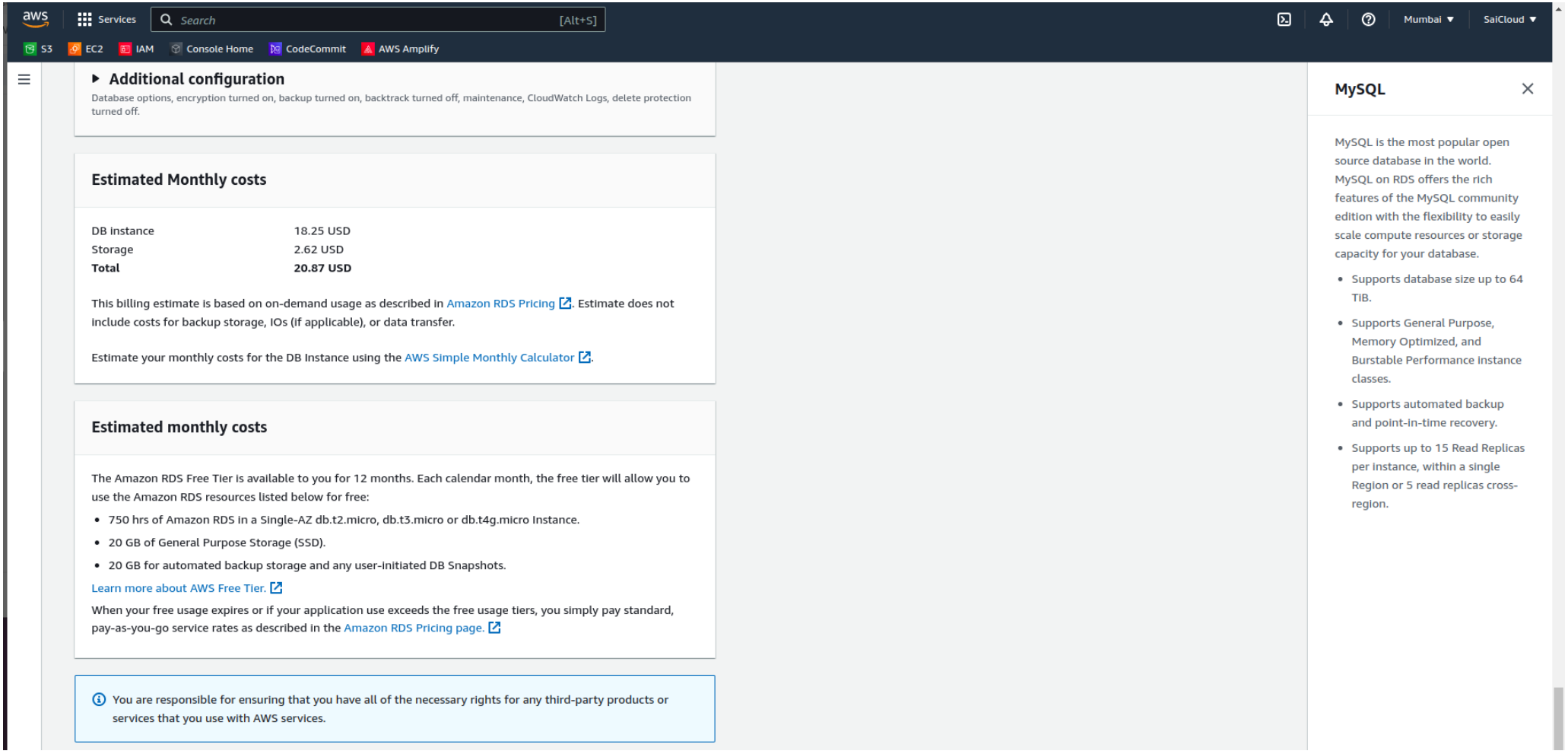
Choose VPC Security Group Diagram.

Click on the "Create database" to start the instance creation.





Click on the "Create database" Diagram.



Click on the "Create database" Diagram.

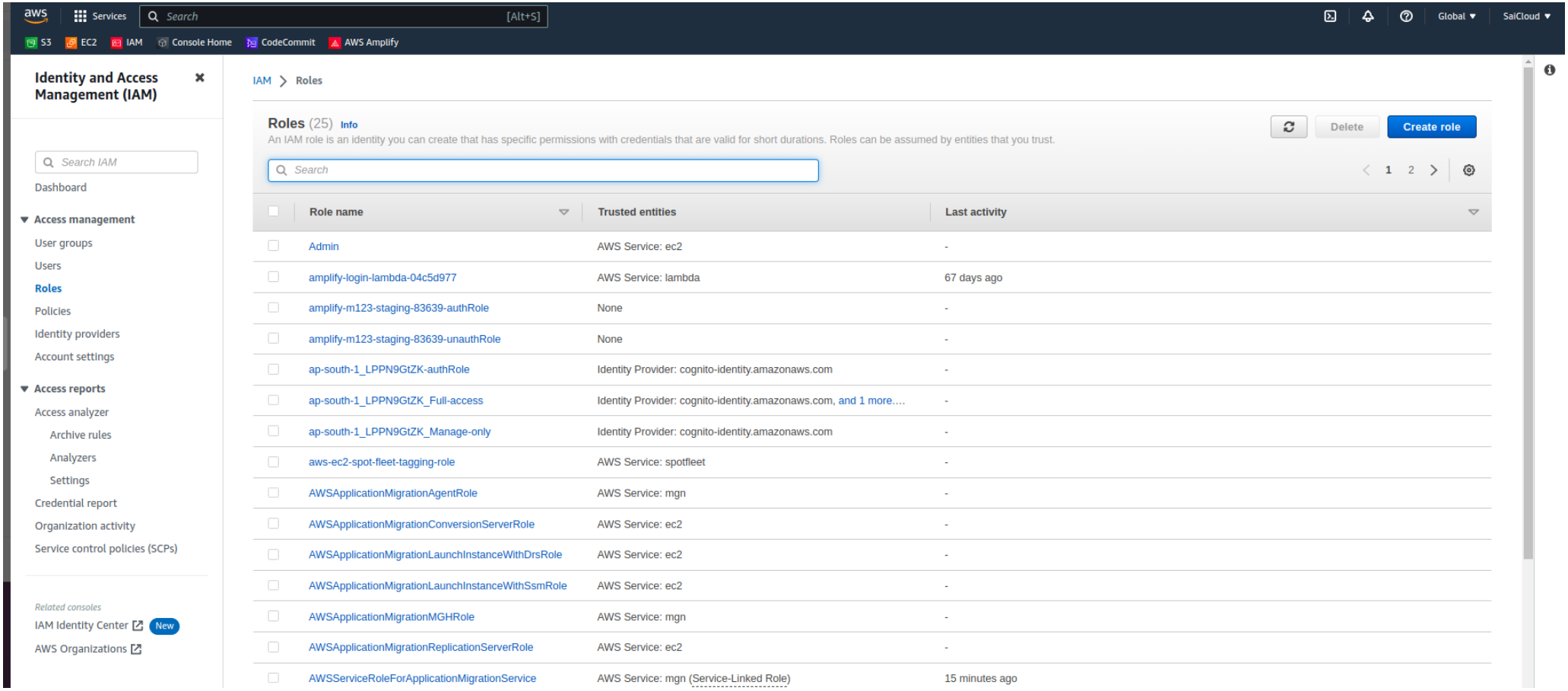
Database is created.

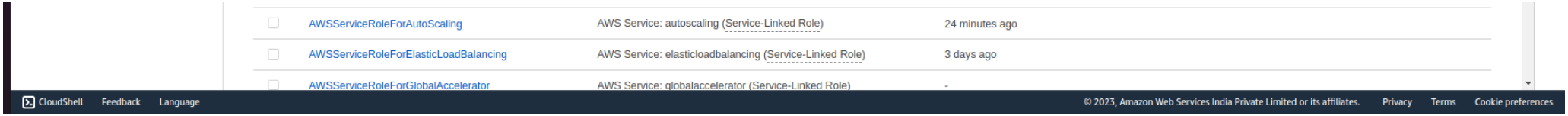
Database is created Diagram.

After completing the Point 1 & Point 2, Move forward to Point to no 3:-

3. Create an IAM role for with RDS access.

Go to the IAM console in AWS. Click on "Roles". click on "Create Role" show in blue colour right side.

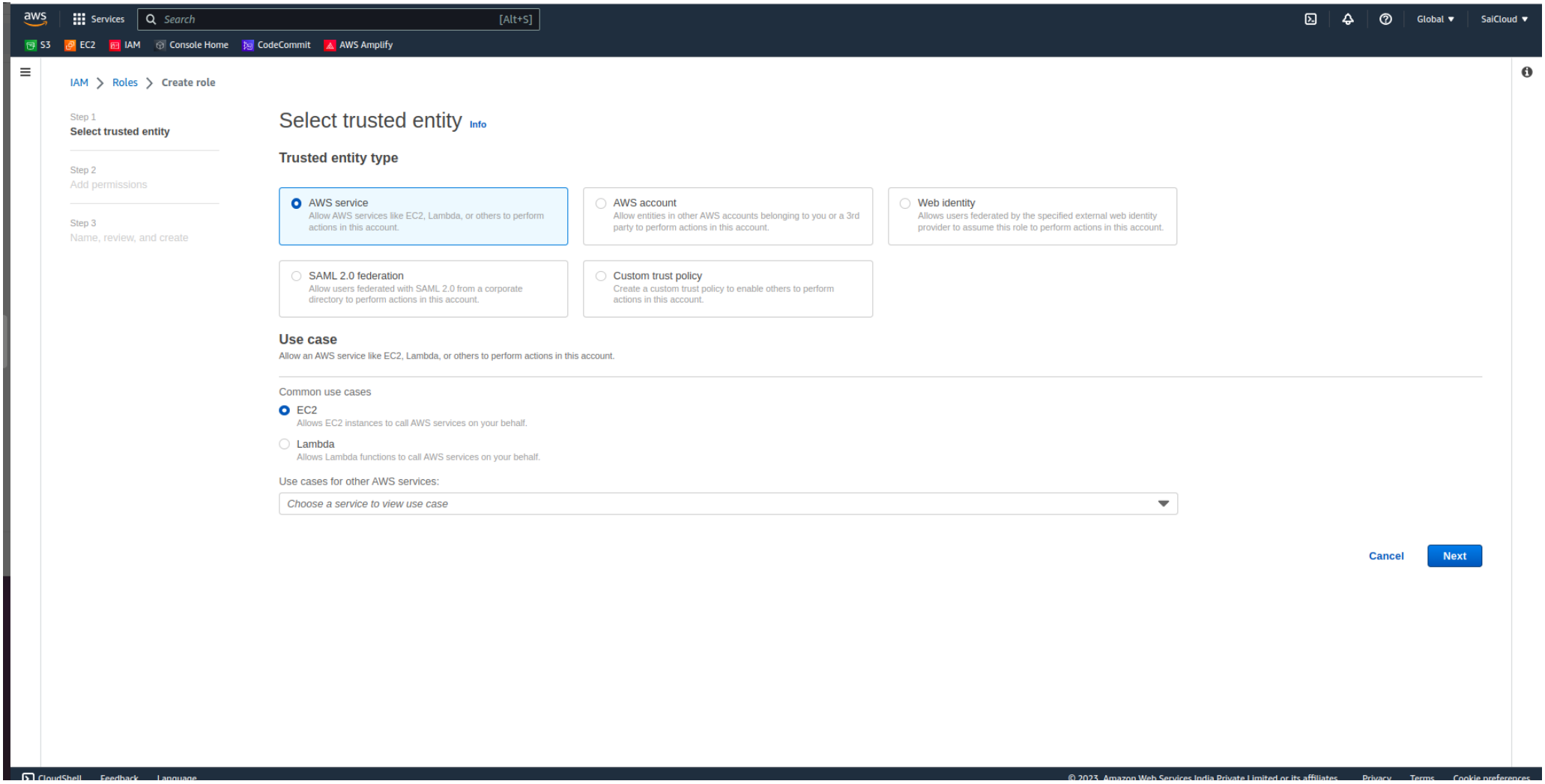




Create an IAM role for with RDS access Diagram.

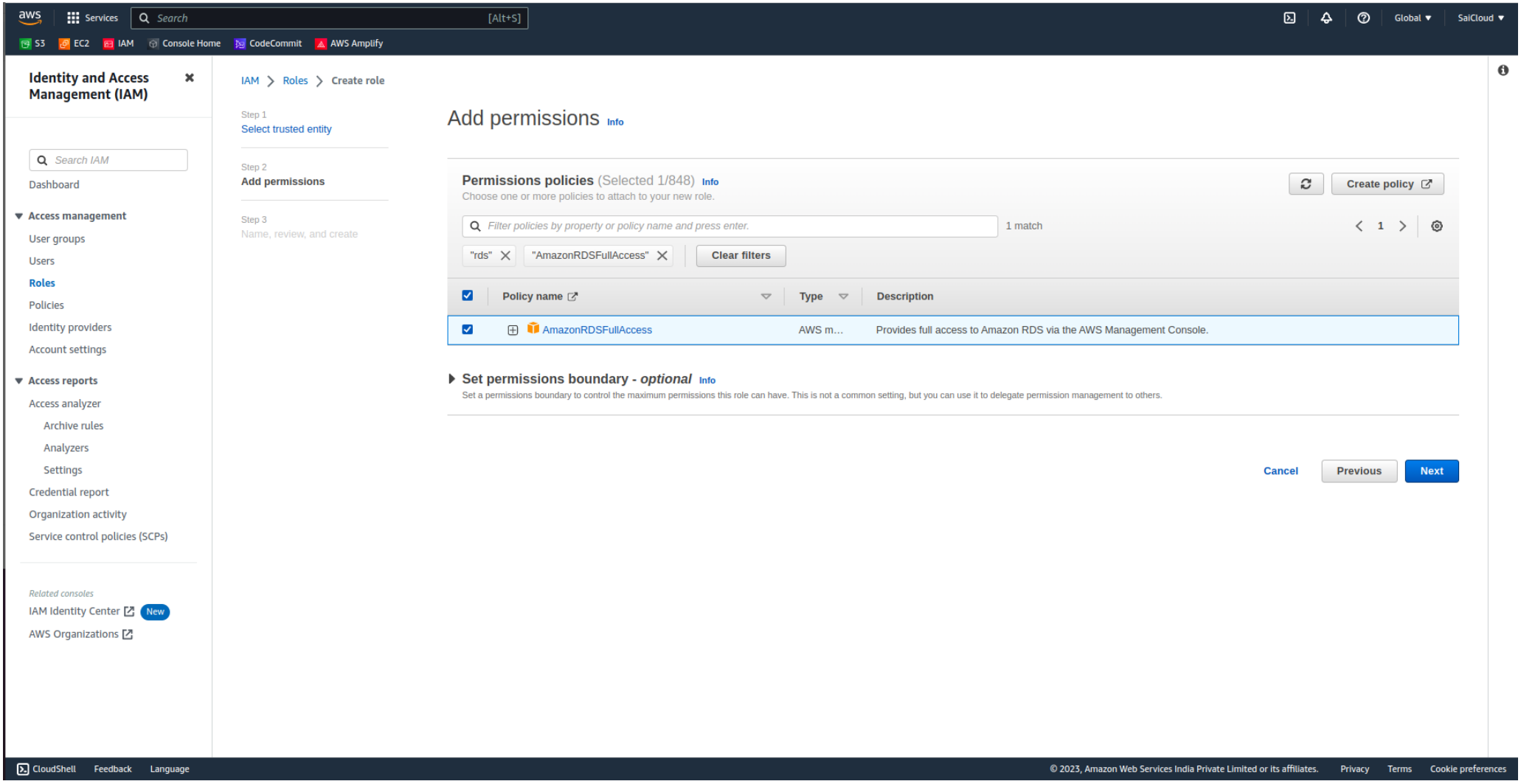
Choose the "AWS Service"

Choose "Allows Ec2 instance to call AWS Services on your behalf".



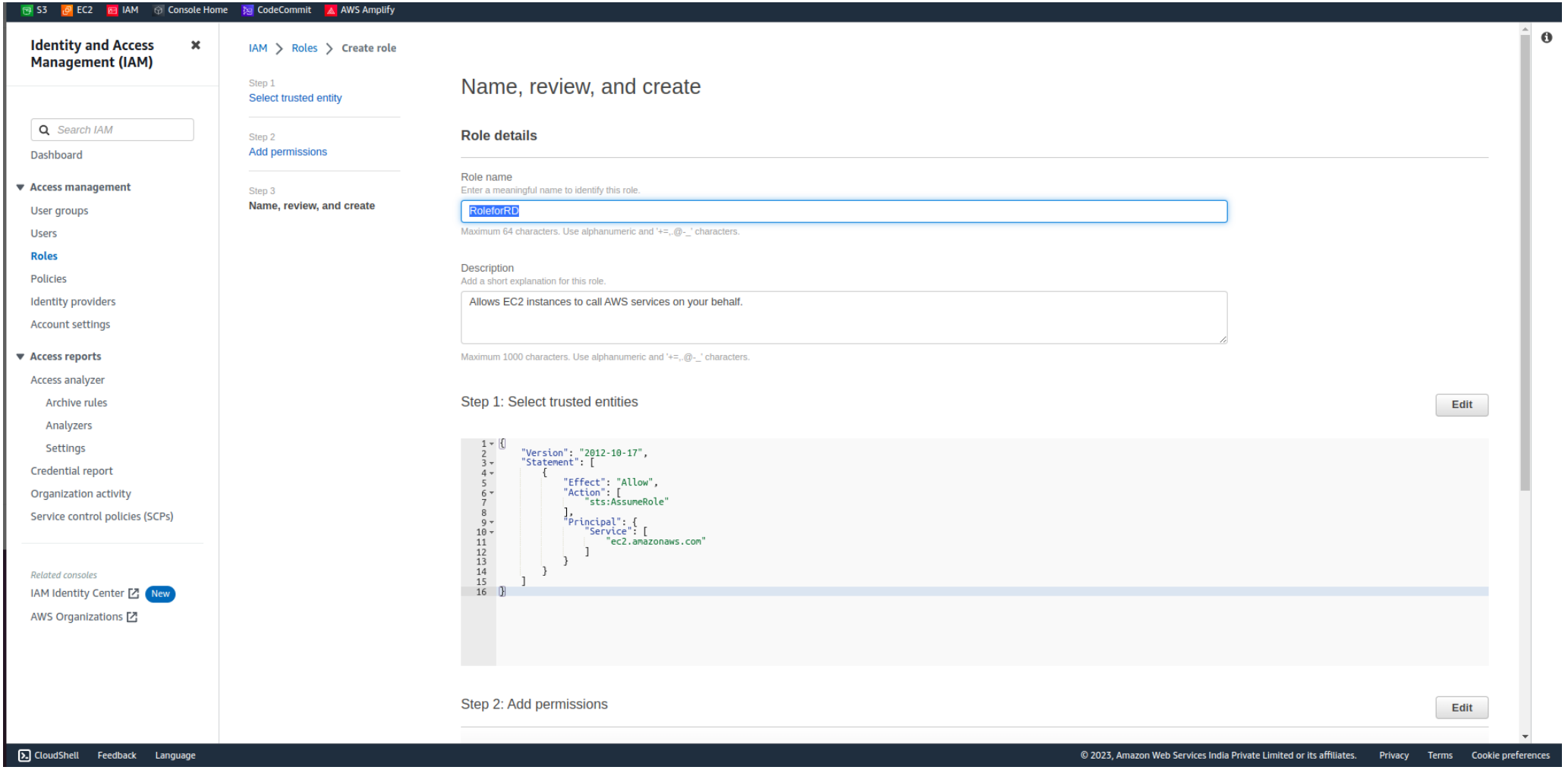
Choose the "AWS Service" Diagram.

Need to be attached the "AmazonRDSFullAccess" policy.



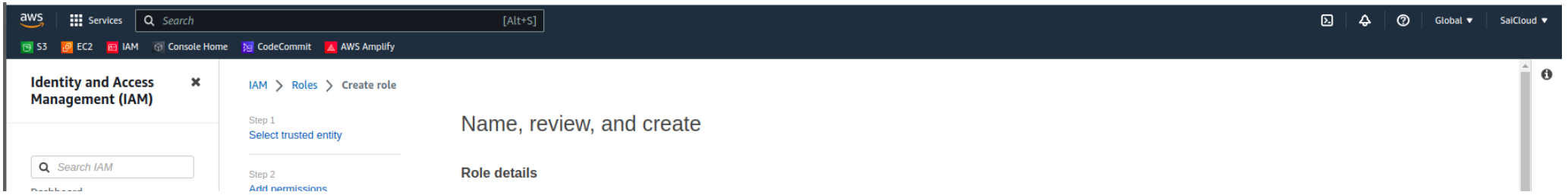
Need to be attached the "AmazonRDSFullAccess" policy. Diagram

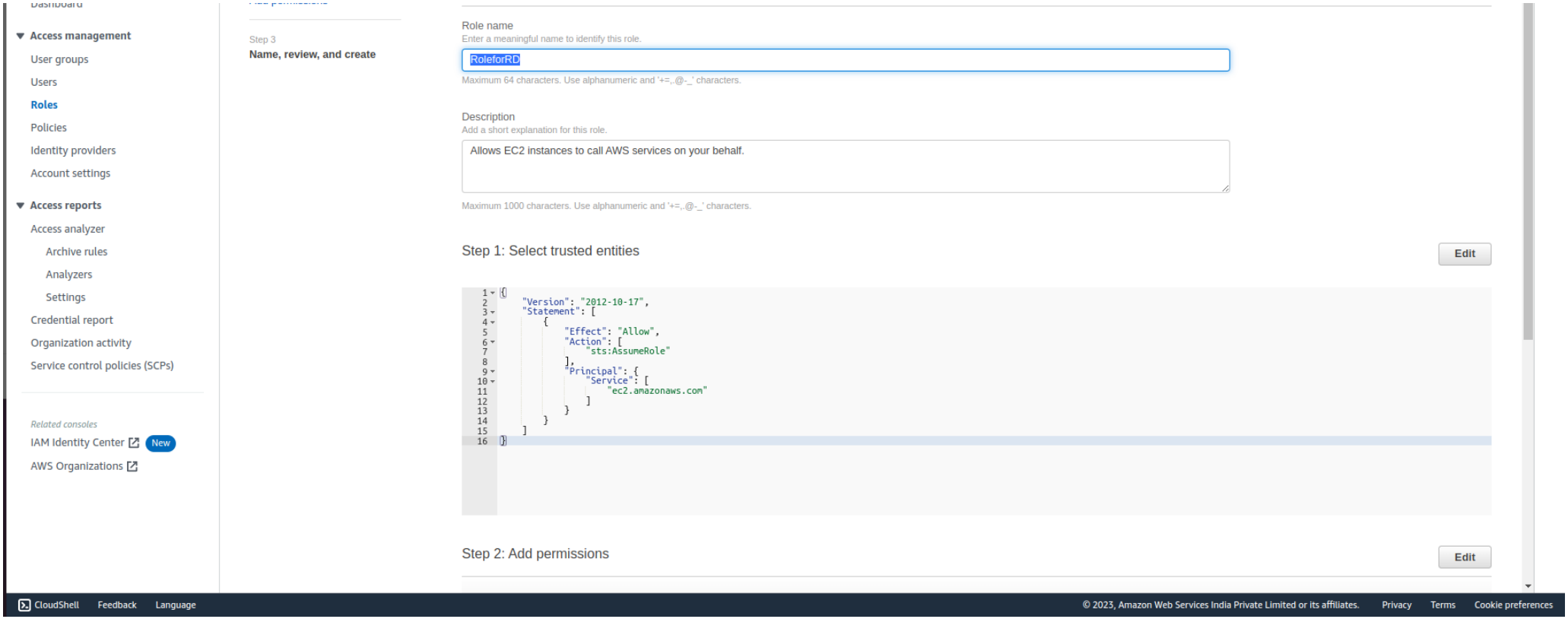
Enter a Unique name for the role.



Enter a Unique name for the role Diagram.

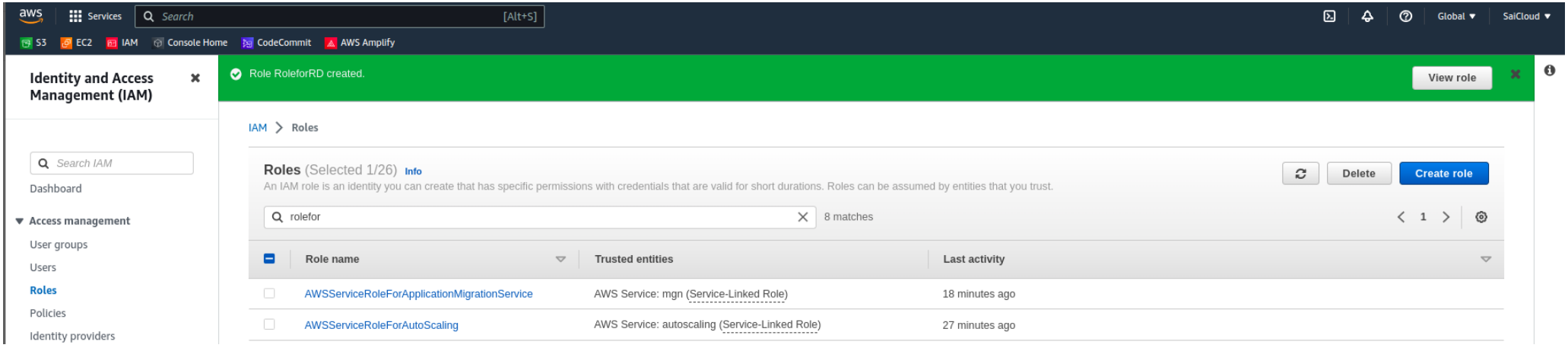
Click on "Create role"

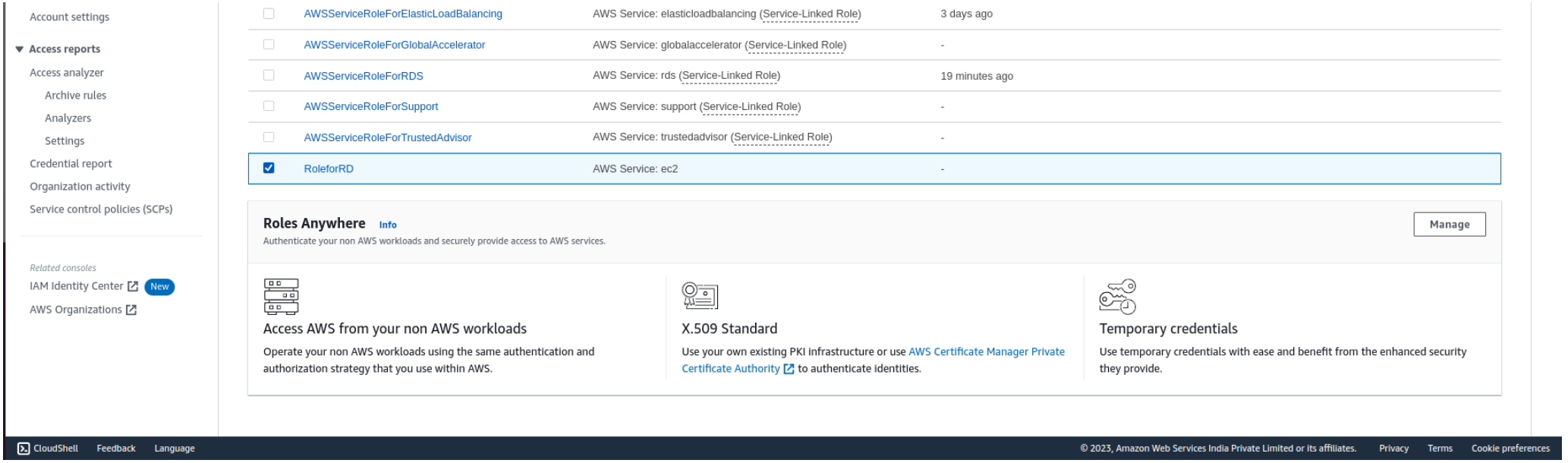




Click on "Create role" Diagram

IAM Role is Successfully created, I will highlight in Blu Tick.





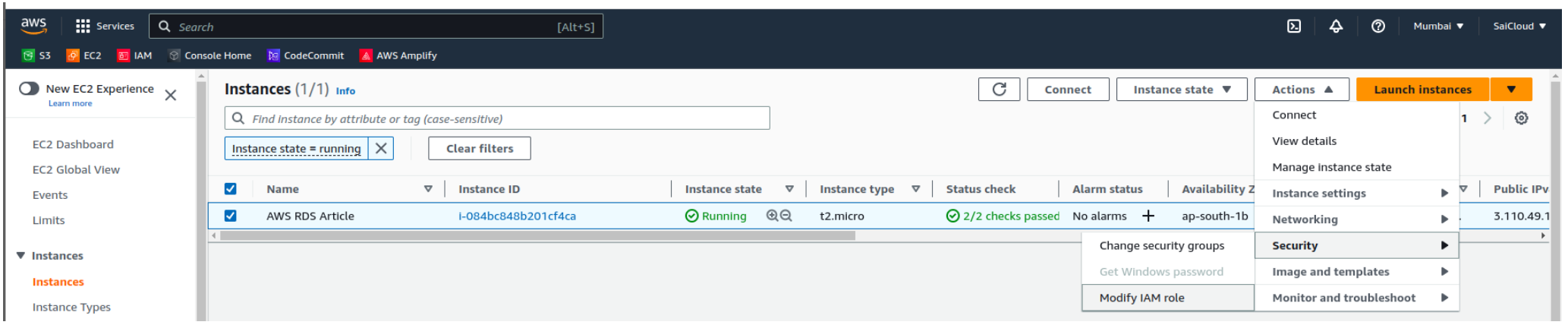
Point No 4 is very Important:-

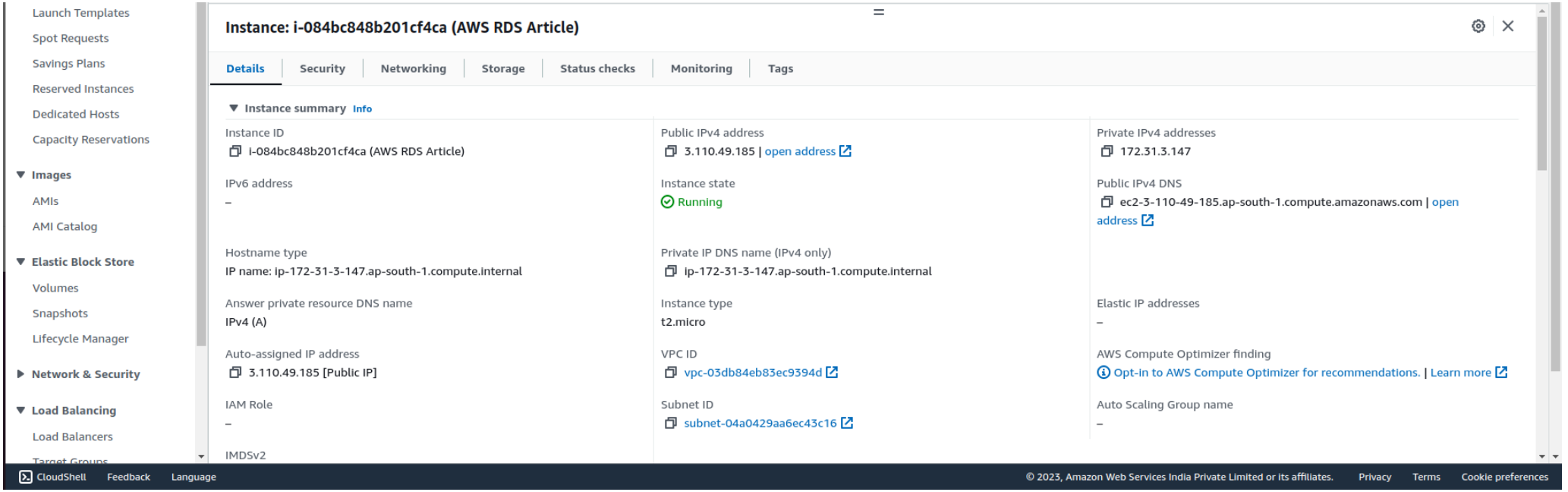
4 Assign the role to EC2 so that your EC2 instance can connect with RDS.

Go to the Ec2 console.

Select the instance you just created.

Click on "Actions" option then "Instance Settings", then "Attach/Replace IAM Role".

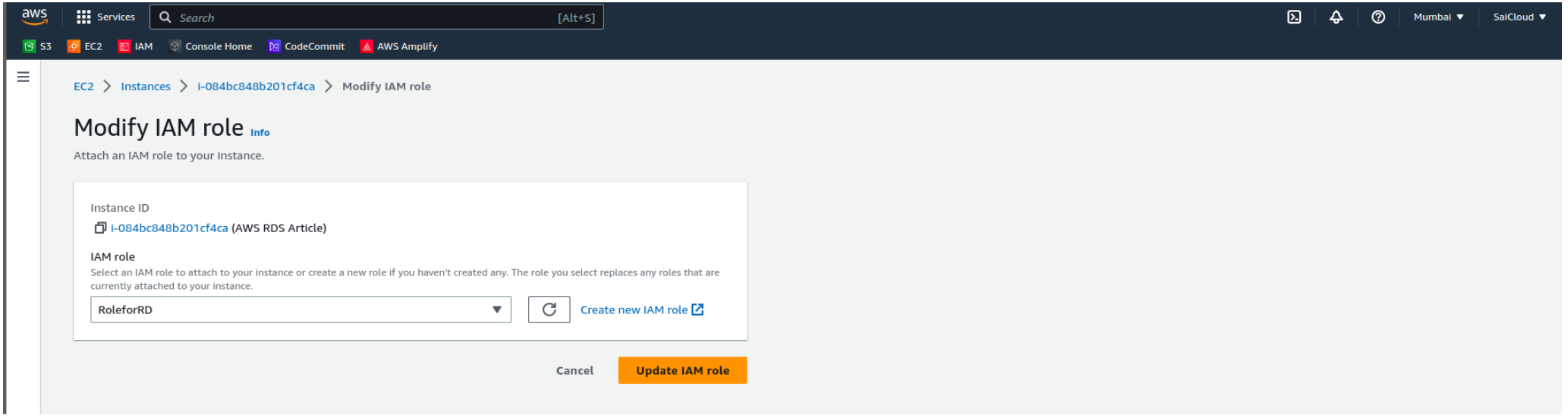


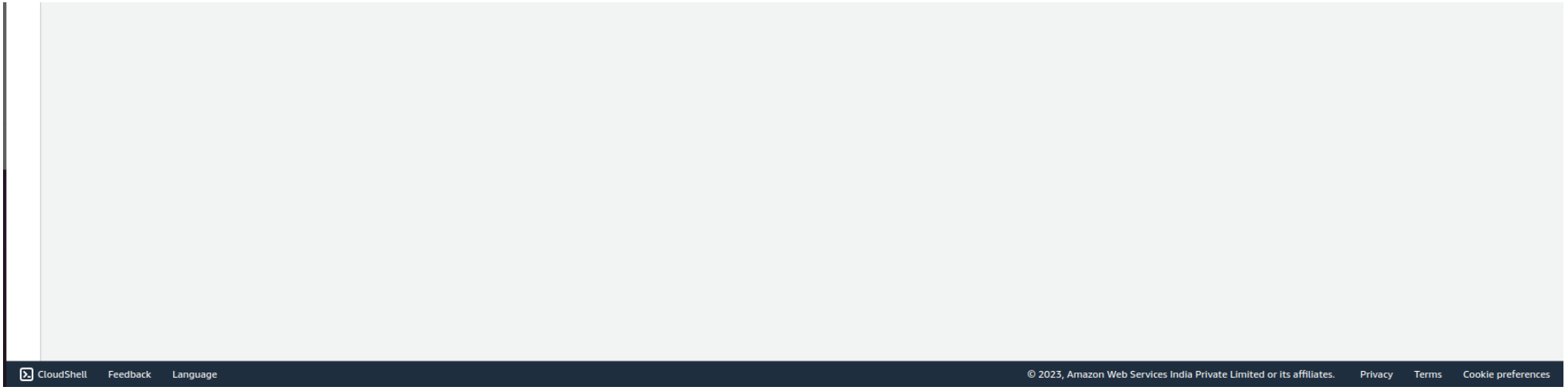


Click on "Actions" option then "Instance Settings", then "Attach/Replace IAM Role" Diagram

Choose the IAM role you just created.

Click on the "Updated IAM role"





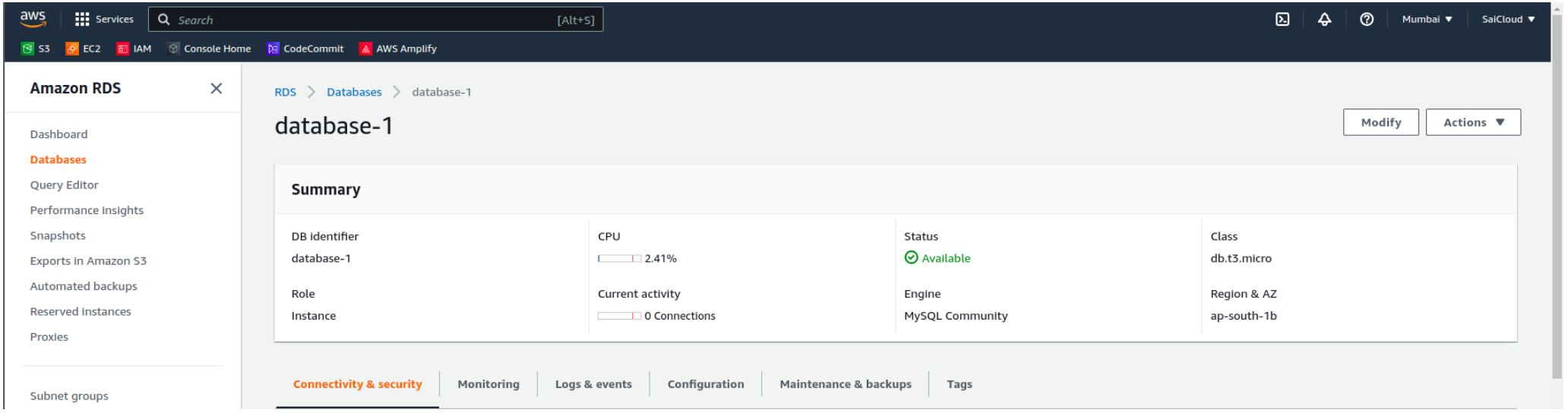
Choose the IAM role you just created Click on the "Updated IAM role" Diagram.

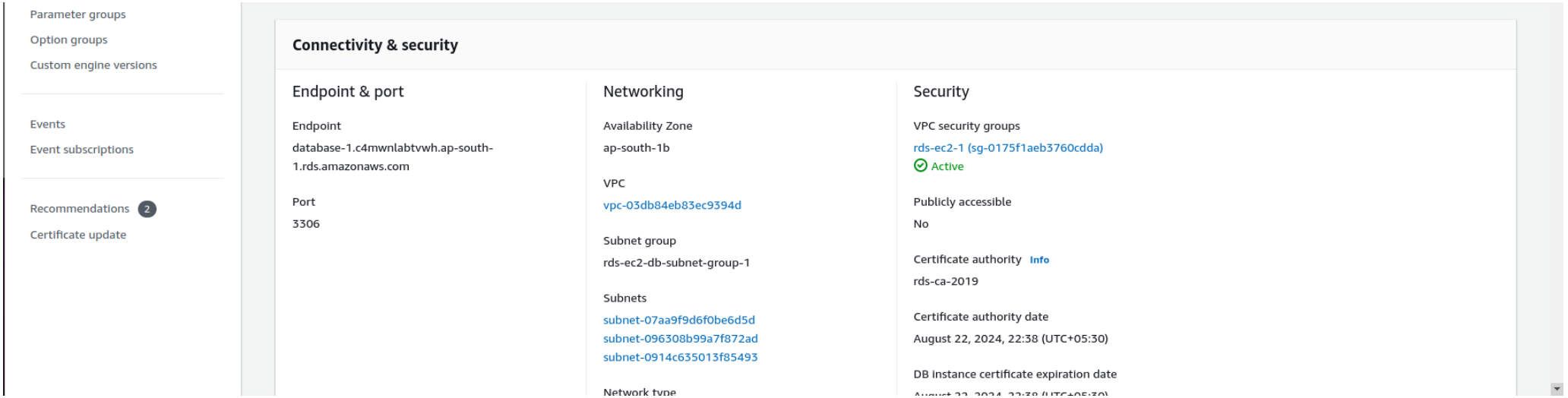
5 Once the RDS instance is up and running,get the Credentials and connect your EC2 instance using a MySQL client.

Go to RDS console in AWS.

Select the Instance you just created.

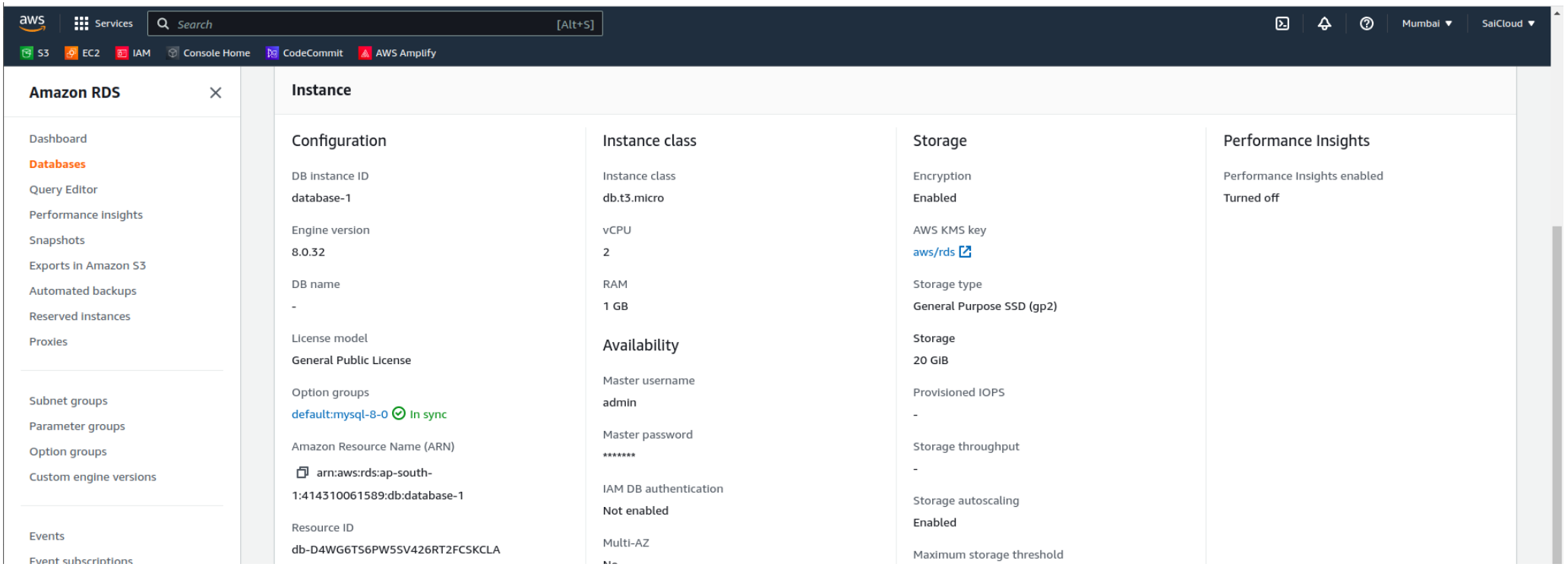
Click "Configuration" and note the endpoint address.

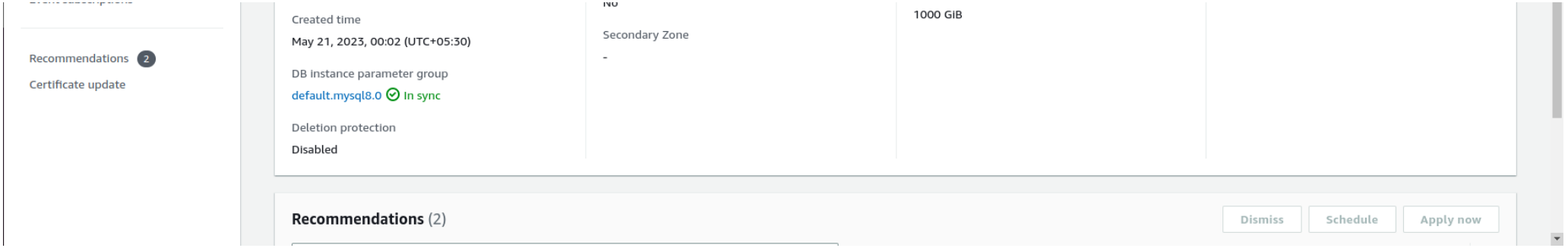




Click "Configuration" and note the endpoint address Diagram.

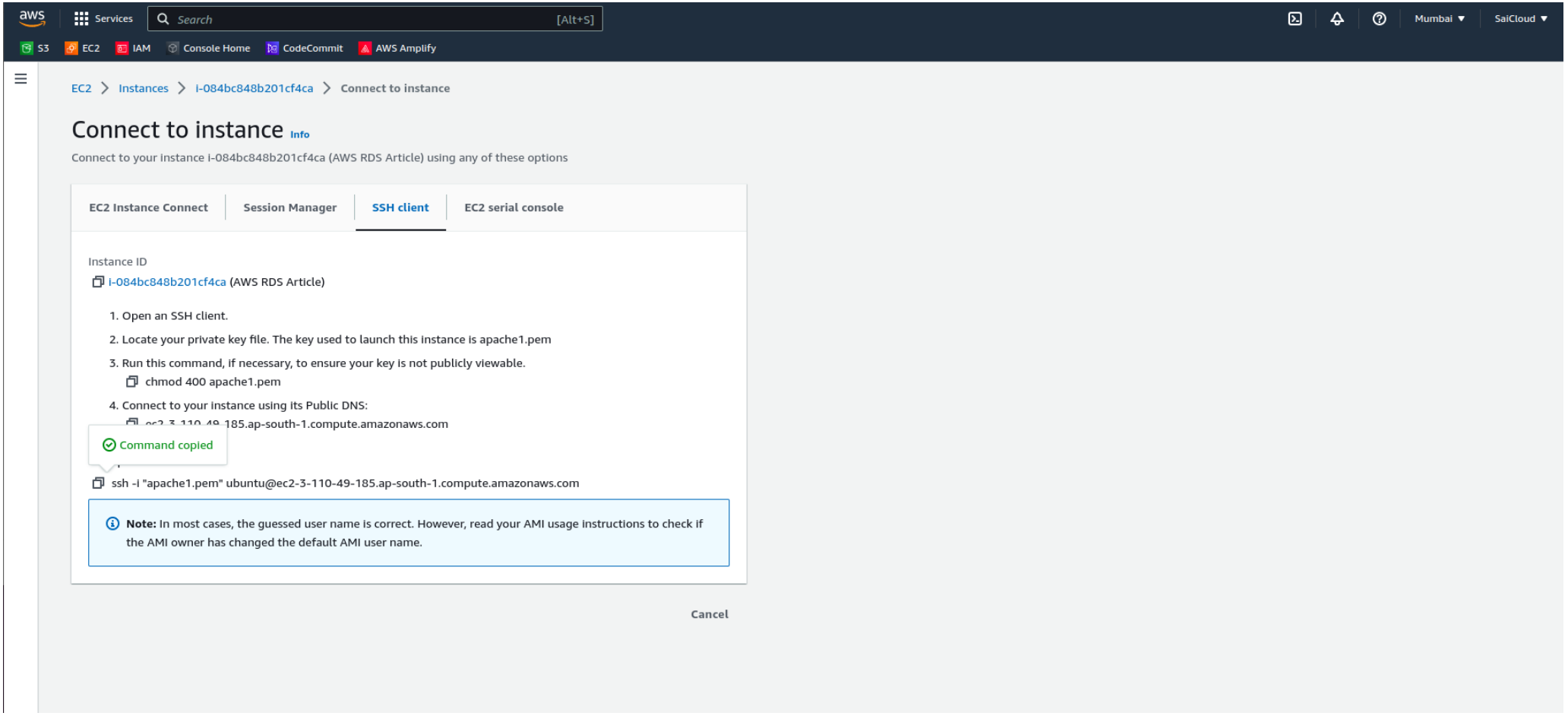
Click "Security" and note the username and Password.





Click "Security" and note the username and Password Diagram.

SSH into your EC2 instance using a Terminal or remote access tool.



SSH into your EC2 instance Diagram.

Successfully login in account with SSH Key Diagram.

Need to be install the MySQL Client, such as "mysql".I will share the commands it will helpful for you for the installtion.

Syntax:-

sudo apt install mysql-client-core-8.0

mysql --version

install the MySQL Client, such as "mysql" & Version check Diagram.

Connect to the RDS instance using the MySql client and the endpoint address username, and Password.

Enter the password when prompter and press enter:-

you should now be connected to the MySQL database on the RDS instance.

Syntax:-

sudo mysql -h database-1.c4mwnlabtvwh.ap-south-1.rds.amazonaws.com -P 3306 -u admin -p

Enter the Password:- <>

you are enter in the mysql:-

mysql>

show databases;

```
mysql-common               mysqltuner
mysql-router               mysqmail
mysql-sandbox              mysqmail-courier-logger
mysql-server               mysqmail-dovecot-logger
mysql-server-8.0           mysqmail-postfix-logger
mysql-server-core-8.0      mysqmail-pure-ftpd-logger
mysql-source-8.0
ubuntu@s3bucket:~$ sudo apt install mysq
mysql-client               mysql-testsuite
mysql-client-8.0           mysql-testsuite-8.0
mysql-client-core-8.0      mysqltcl
mysql-common               mysqltuner
mysql-router               mysqmail
mysql-sandbox              mysqmail-courier-logger
mysql-server               mysqmail-dovecot-logger
mysql-server-8.0           mysqmail-postfix-logger
mysql-server-core-8.0      mysqmail-pure-ftpd-logger
mysql-source-8.0
ubuntu@s3bucket:~$ sudo apt install mysql-client-core-8.0
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  mysql-client-core-8.0
0 upgraded, 1 newly installed, 0 to remove and 17 not upgraded.
Need to get 5173 kB of archives.
After this operation, 75.5 MB of additional disk space will be used.
Get:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client-core-8.0 amd64 8.0.33-0ubuntu0.20.04.2 [5173 kB]
Fetched 5173 kB in 1s (6318 kB/s)
Selecting previously unselected package mysql-client-core-8.0.
(Reading database ... 91438 files and directories currently installed.)
Preparing to unpack .../mysql-client-core-8.0_8.0.33-0ubuntu0.20.04.2_a
md64.deb ...
Unpacking mysql-client-core-8.0 (8.0.33-0ubuntu0.20.04.2) ...
Setting up mysql-client-core-8.0 (8.0.33-0ubuntu0.20.04.2) ...
Processing triggers for man-db (2.9.1-1) ...
ubuntu@s3bucket:~$ mysql --version
mysql  Ver 8.0.33-0ubuntu0.20.04.2 for Linux on x86_64 ((Ubuntu))
ubuntu@s3bucket:~$
```

sudo mysql -h database-1.c4mwnlabtvwh.ap-south-1.rds.amazonaws.com -P 3306 -u admin -p Diagram

(Note) if your RDS are not access please check the Endpoint address in RDS. It will take one or 2 min for access.

In this blog, I have discussed RDS Definition, create a database,attach with the IAM Role . If you have any questions or would like to share your experiences, feel free to leave a comment below. Don't forget to read my blogs and connect with me on LinkedIn and let's have a conversation.

Thank you for reading !! I hope you find this article helpful!!

Happy Learning!!

Next Topic:

Day 45: Deploy Wordpress Website on AWS