Lab-5.

**Aim:** To build a database server and interact with our database using an App.

Description:-

Amazon Relational Database service (Amazon RDS) makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity while managing time-consuming database administration tasks, which allows you to focus on your applications and business. Amazon RDS provides you with six familiar database engines to choose from: Amazon Aurora, oracle, microsoft SQL server, postgresQL, mysQL and MariaDB.

Architecture:-
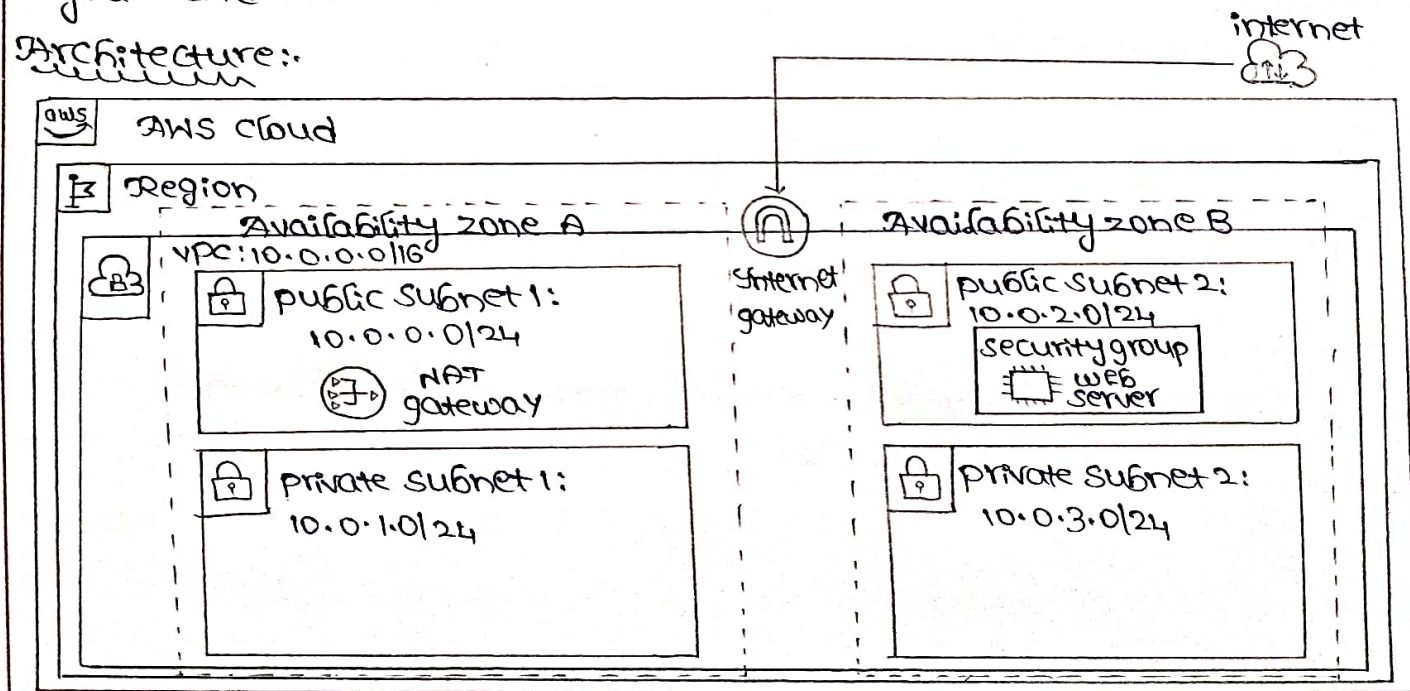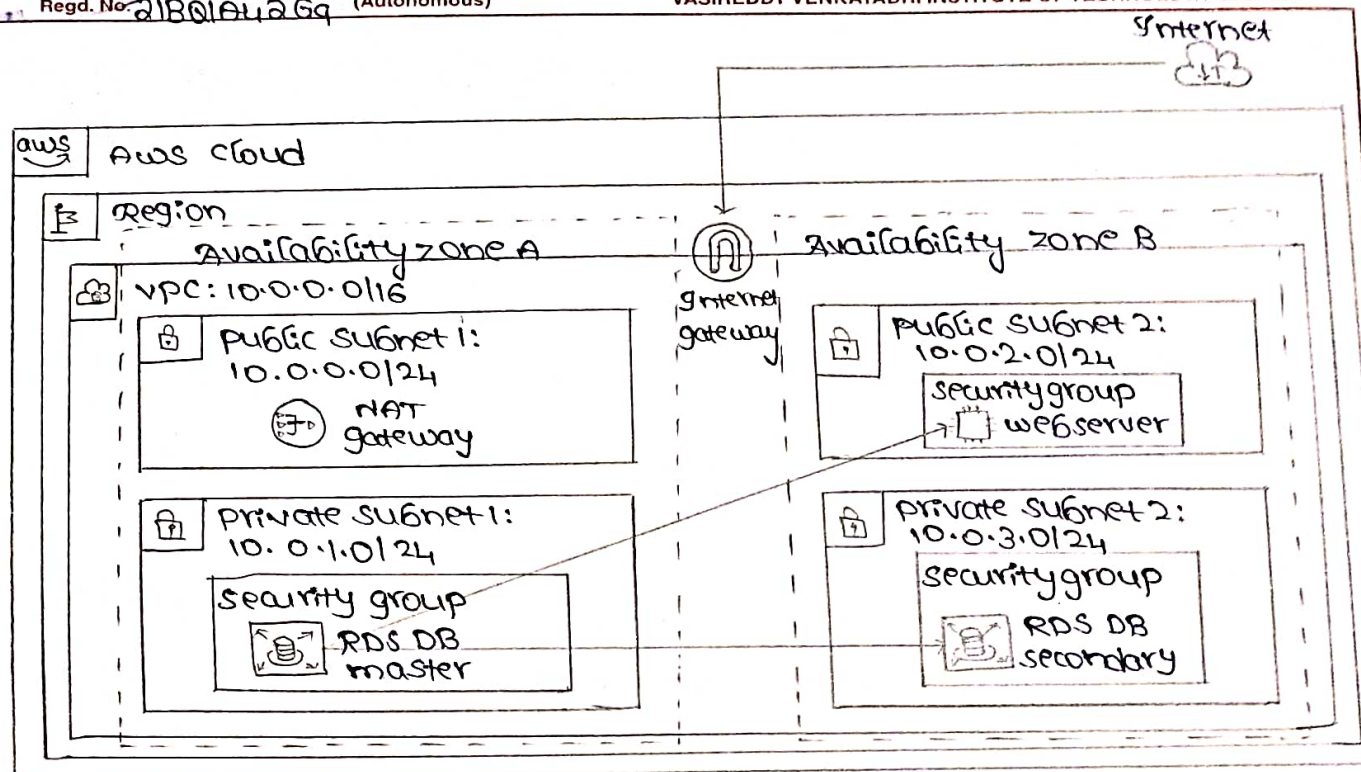
Steps followed for Building the Database server:-

* Click [start lab] to launch the lab

* wait until you see the message "lab status: ready".

* choose [AWS].

Task-1: Create a security group for the RDS DB instance:-

* In the AWS management console, on services menu, choose VPC.

* In navigation pane, choose security Groups.

* Choose create security group and then configure:
  - security group name: DB security Group
  - Description: permit access from web security Group
  - VPC: lab vpc.

* In the Inbound rules pane, choose Add rule.

* Configure the following Settings:-

     o Type: MYSQL / Aurora (3306)

     o CIDR, IP, Security Group or prefix List:- Type sg and then select web security Group.

* choose create security group.

Task-2: Create a DB subnet Group:-

* On the services menu, choose RDS.

* In Navigation pane, choose subnet groups.

* choose create DB subnet Group then configure.

    o Name: DB-subnet-Group

    o Description: DB-Subnet group

    o VPC: Lab VPC.

* scroll down to the Add subnets section.

* Expand the list of values under Availability zones and select the first two zones: us-east-1a and us-east-1b.

* Expand the list of values under subnets and CIDR ranges 10.0.1.0/24 and 10.0.3.0/24

* choose create.

Task-3: create an Amazon RDS DB instance:-

* In navigation pane, choose Databases.

* choose create database.

    o choose switch to the new database creation flow.

* Select MySQL under Engine options.

* under Templates choose Dev/Test

* Under availability and durability choose multi-Az DB instance.

  under settings, configure:

  o DB instance identifier: Lab-db

  o master username: main

  o master password: Lab-password

  o Confirm password: Lab-password.

* Under DB instance class, configure:

  o Select Burstable classes (includest + classes)

  o select db.t3.micro.

* under storage, configure:

  o storage type: General purpose (SSD)

  o Allocated storage: 20

* under connectivity, configure:

  o virtual private cloud (vpc): Lab vpc

* under Existing vpc security groups,

  o choose DB security Group.

  o Deselect default.

* Expand additional configuration, then configure:

  o Initial database name:

  o uncheck Enable automatic backups.

  o uncheck Enable encryption

  o uncheck Enable Enhanced monitoring.

* Choose database

  o your database will now be launched.

* choose lab-db.

    you will now need to wait approximately 4 minutes.

* Wait until info changes to modifying or available.

* scroll down to the connectivity and security section and copy the Endpoint field.

  o It will look similar to: lab-db.cgg2816nxvnv.us-west-2.rds.amazonaws.com.

* paste the Endpoint value into a text editor.

Task-4: Interact with Database:

* To copy the webserver ip address, choose on details drop down menu, choose show.

* Open a new web browser tab, paste the webserver ip address and press Enter.

* Choose the RDS line.

* configure the following settings:

  o Endpoint: paste the endpoint we copied to a text editor.

  o Database: lab

  o Username: main

  o password: lab-password

o choose submit and test the web application.

* choose [End lab] and then choose [Yes] to confirm that we want to end the lab.