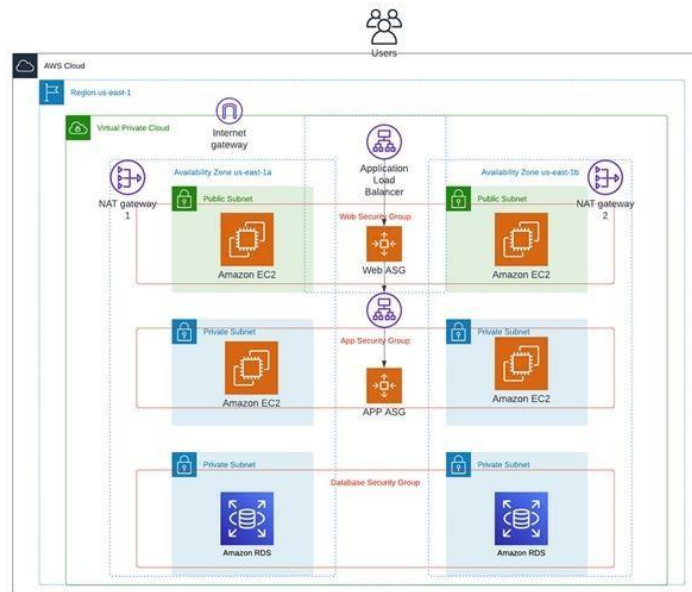


Creating a 3-Tier Architecture for Web Applications in AWS



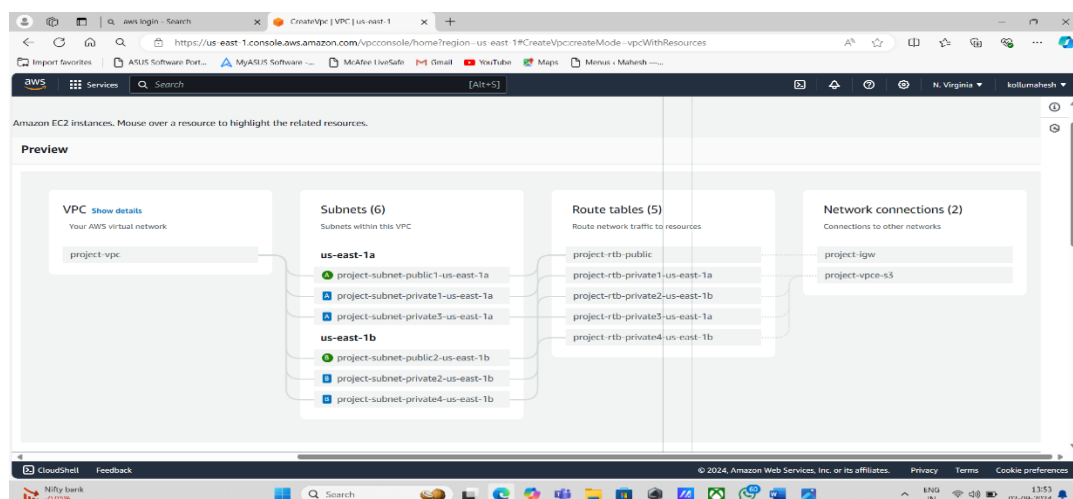
A three-tier architecture in AWS (Amazon Web Services) involves structuring applications into three distinct layers: Presentation, Application, and Data. Each tier has specific responsibilities and can be implemented using various AWS services to ensure scalability, security, and manageability.

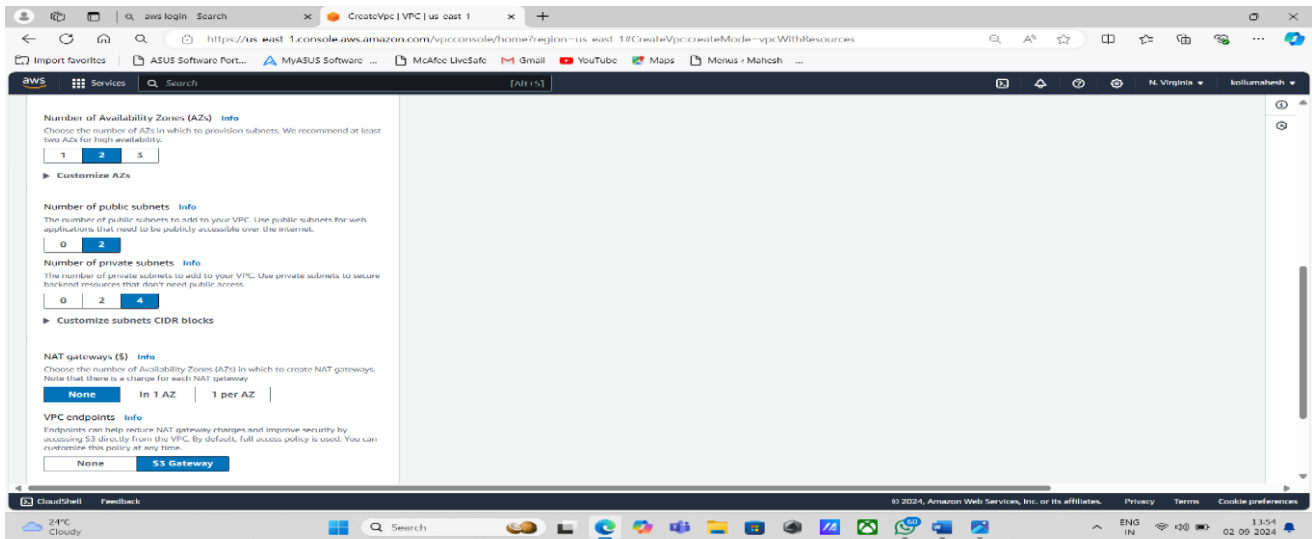
This network consists of:

- A VPC.
- Two public subnets spread across two availability zones (Web Tier).
- Two private subnets spread across two availability zones (Application Tier).
- Two private subnets spread across two availability zones (Database Tier).
- One public route table that connects the public subnets to an internet gateway.
- One private route table that will connect the Application Tier private subnets and a NAT gateway.
- Load Balancers, Auto-Scaling Groups, Target Groups and Database.
- One Public Instance and One Private Instance

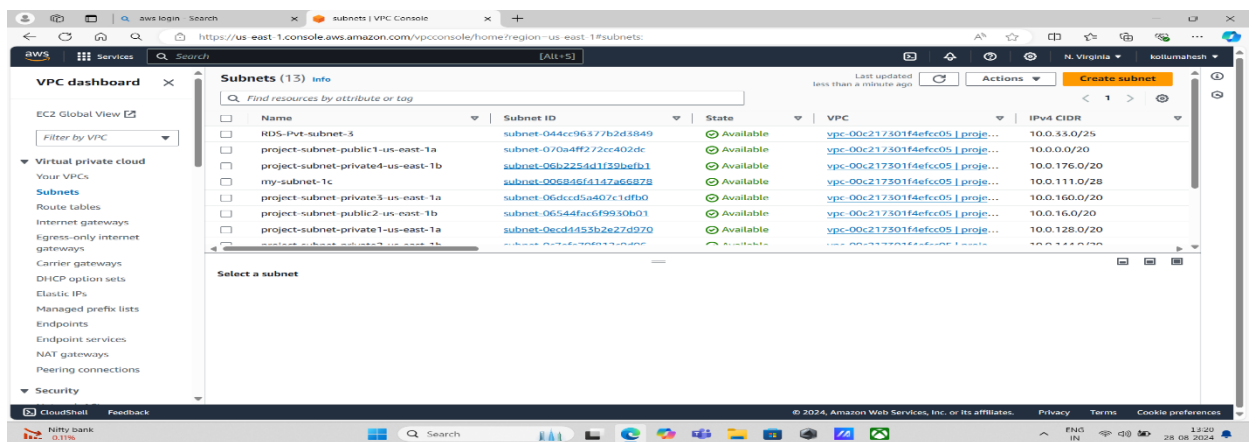
Steps for creating 3- Tier Architecture:

- Create VPC, Subnets, Route tables

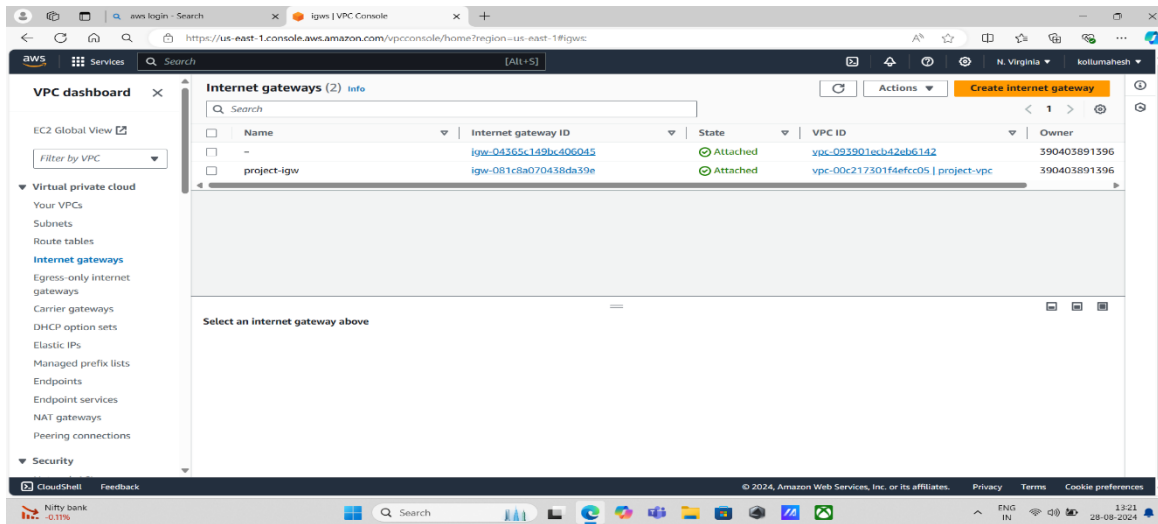




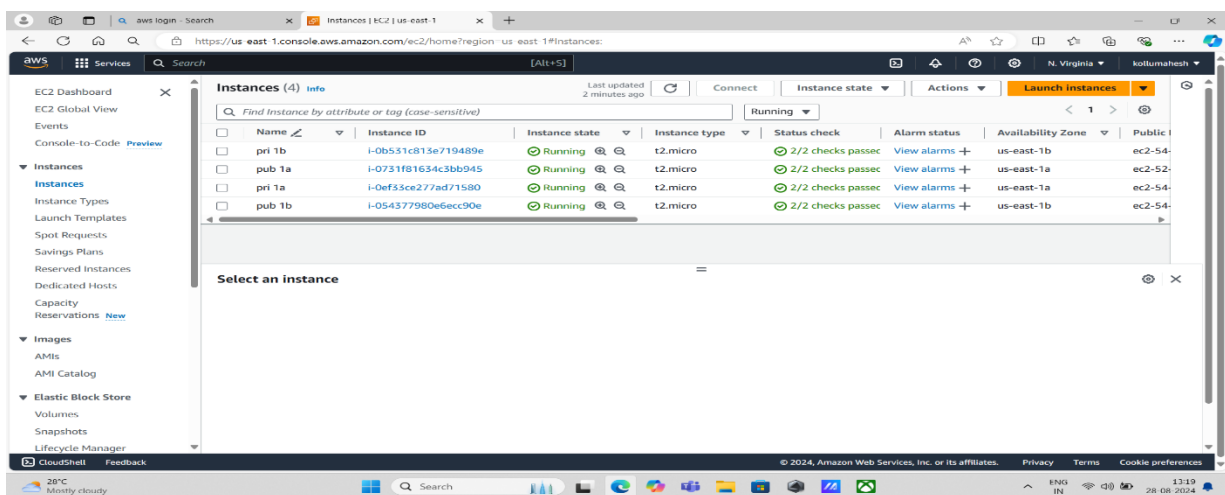
- Create 2 public subnets and 4 private subnets.



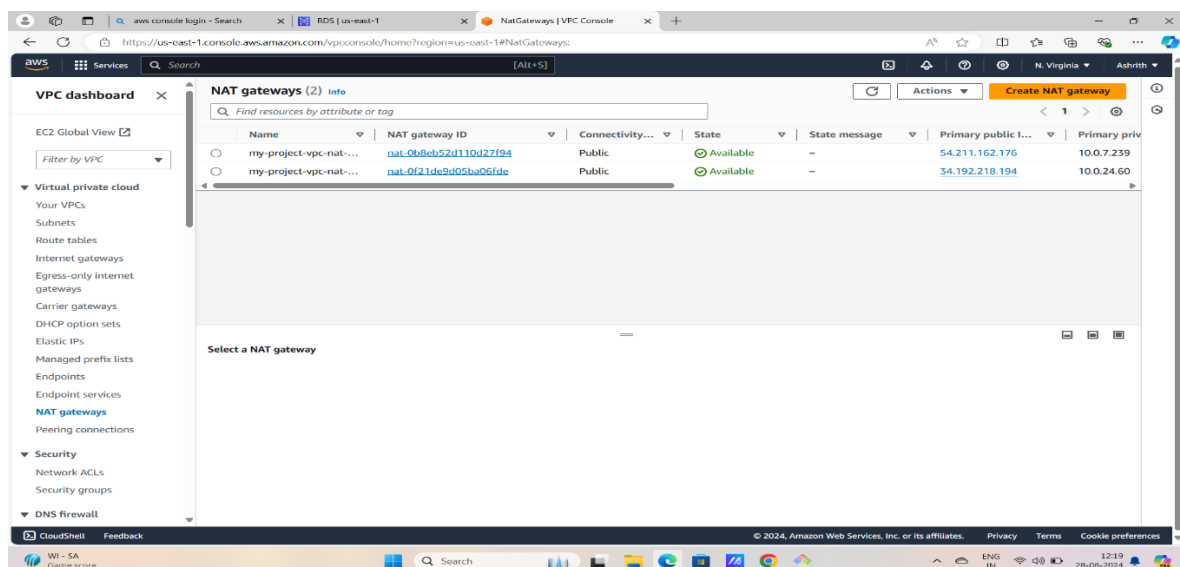
- Create one Internet gateway and attach with VPC.



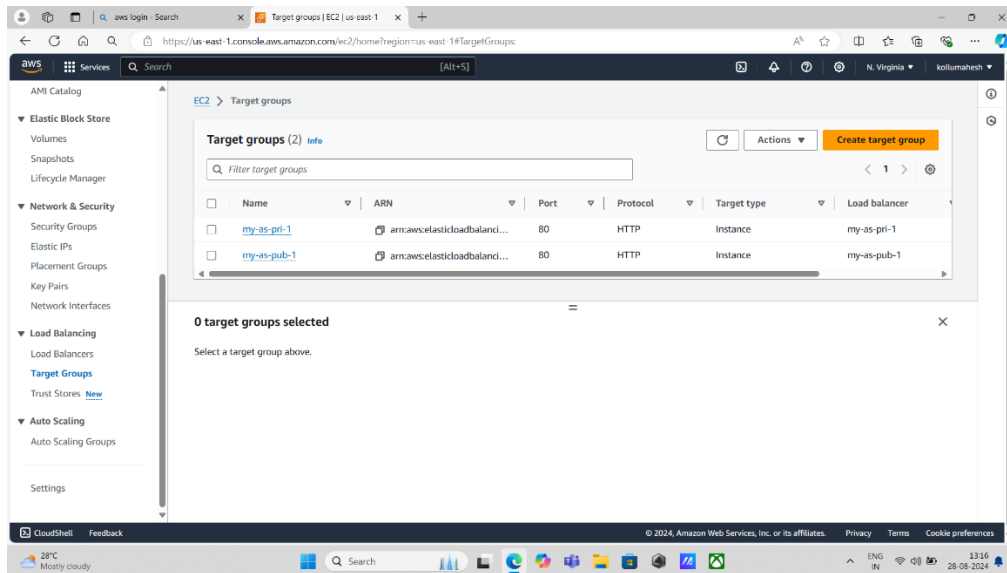
- Create EC2 Instances 2 public and 2 private Instances in **us-east-1a** and **us-east-1b** regions.



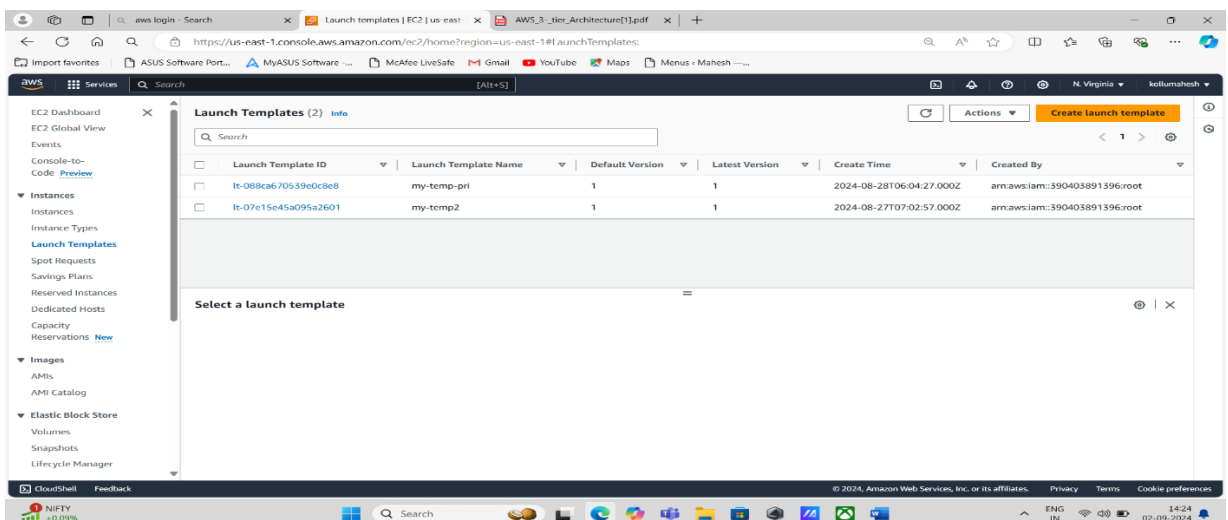
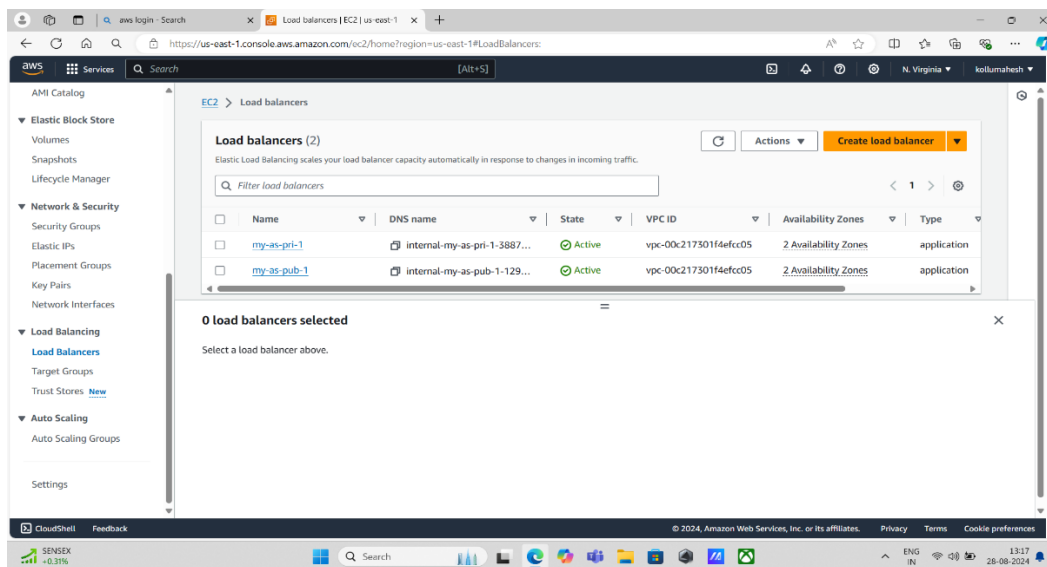
- Create 2 NAT gateways for 2 regions.

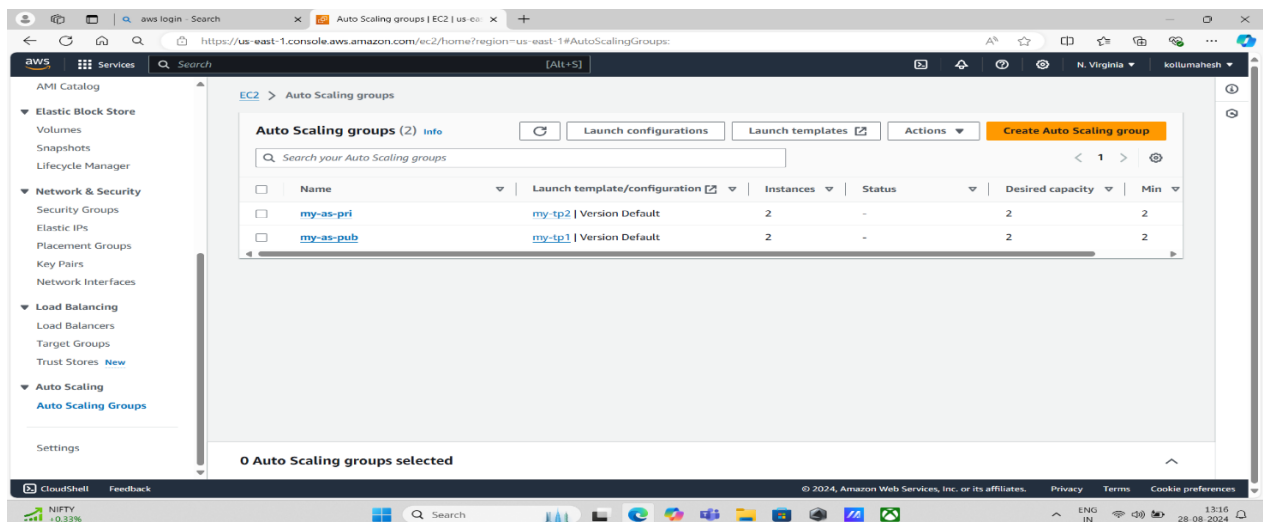


- Create Target groups.

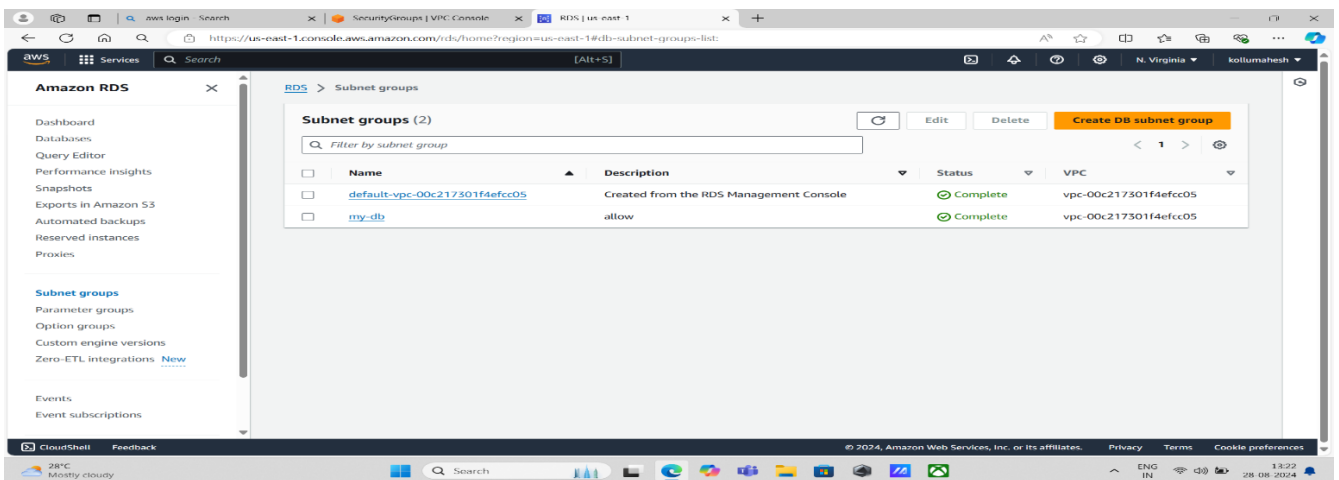


- Create Load balancers, Launch 2 templets and create Auto- Scaling.

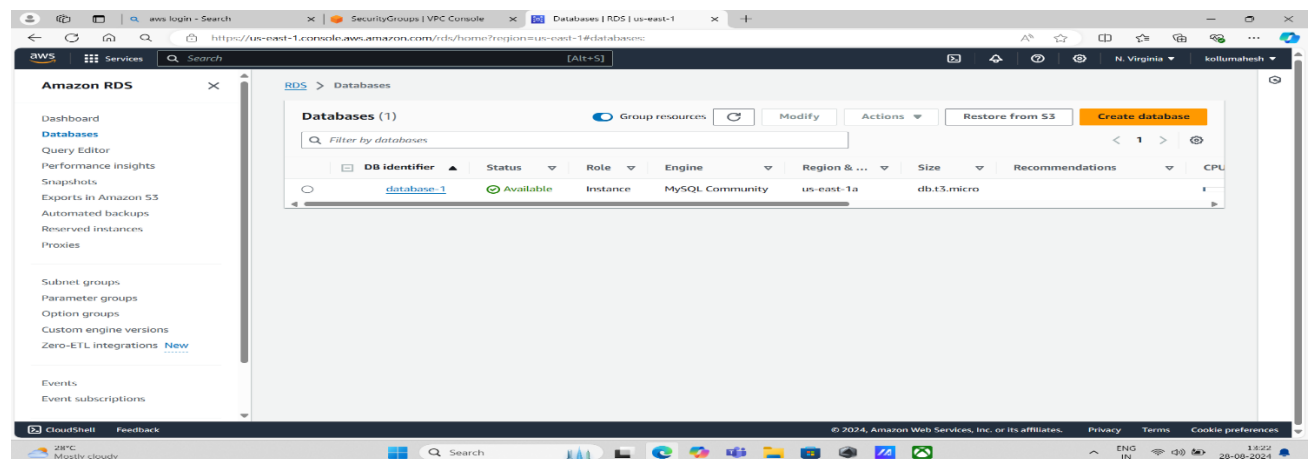




- Add remaining 2 private subnets to the RDS subnet group.



- Create a MySQL database cluster.



- Connecting System to the instance(ubuntu) and attaching database to an Instance.

```
root@ip-10.0.7.72: ~# mysql -h database-1.c3241ukgwc2.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 27
Server version: 8.0.35 Source distribution

Copyright (c) 2000, 2024, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

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

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql      |
| performance_schema |
| sys       |
+-----+
4 rows in set (0.00 sec)

mysql>
```

- Create a database, Use Database and create a table in database and Insert data into it..