

AWS PROJECT 2

PRUTHVI RAJ.M

INSTALLING MYSQL IN LINUX INSTANCE BY BOOTSTRAPPING METHOD

Step 3: Configure Instance Details

Shutdown behavior: Stop

Stop - Hibernate behavior: ☐ Enable hibernation as an additional stop behavior

Enable termination protection: ☐ Protect against accidental termination

Monitoring: ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenacity: Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Elastic Inference: ☐ Add an Elastic Inference accelerator
Additional charges apply.

Credit specification: ☐ Unlimited
Additional charges may apply

File systems: [Add file system](#) [Create new file system](#)

Advanced Details

Enclave: ☐ Enable

Metadata accessible: Enabled

Metadata version: V1 and V2 (token optional)

Metadata token response hop limit: 1

User data: ☐ As text ☐ As file ☐ Input is already base64 encoded

```
#/bin/bash -ex
yum install mysql -y
```

Cancel Previous **Review and Launch** Next: Add Storage

KEY VALUE FOR INSTANCE WHICH IS BEEN CREATED

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)	Value (256 characters maximum)	Instances	Volumes
Name	MyRdsEc2server	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

Cancel Previous **Review and Launch** Next: Configure Security Group

SECURITY GROUP FOR EC2 INSTANCE

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name: MyEc2server-SG

Description: Security for ec2 server to connect with RDS

Type	Protocol	Port Range	Source	Description
All traffic	All	0-65535	Anywhere (0.0.0.0/0)	e.g. SSH for Admin Desktop

Add Rule

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

EC2 INSTANCE REVIEW

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, MyEc2server-SG, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0be2699a883822ec
Free tier eligible
Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemD 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is a...
Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups [Edit security groups](#)

Security group name: MyEc2server-SG
Description: Security for ec2 server to connect with RDS

Type	Protocol	Port Range	Source	Description
All traffic	All	All	0.0.0.0/0	
All traffic	All	All	:/0	

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

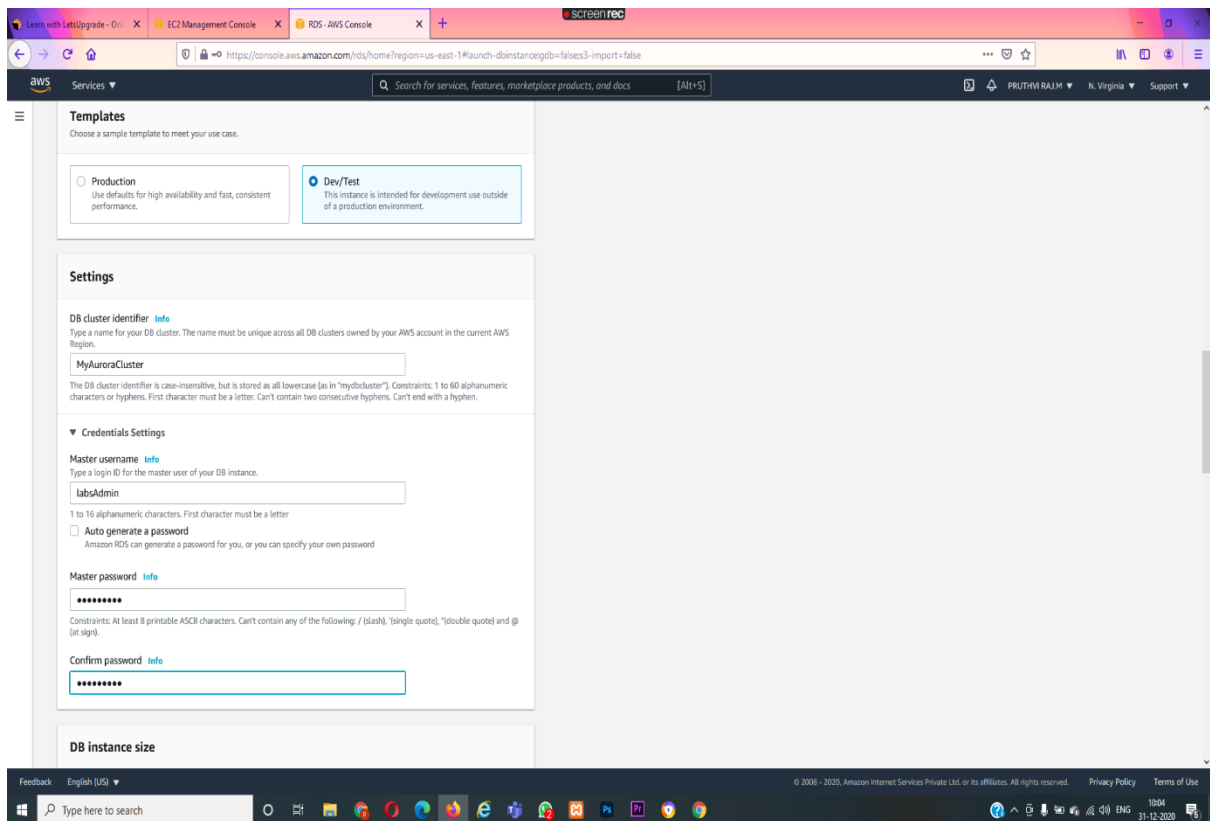
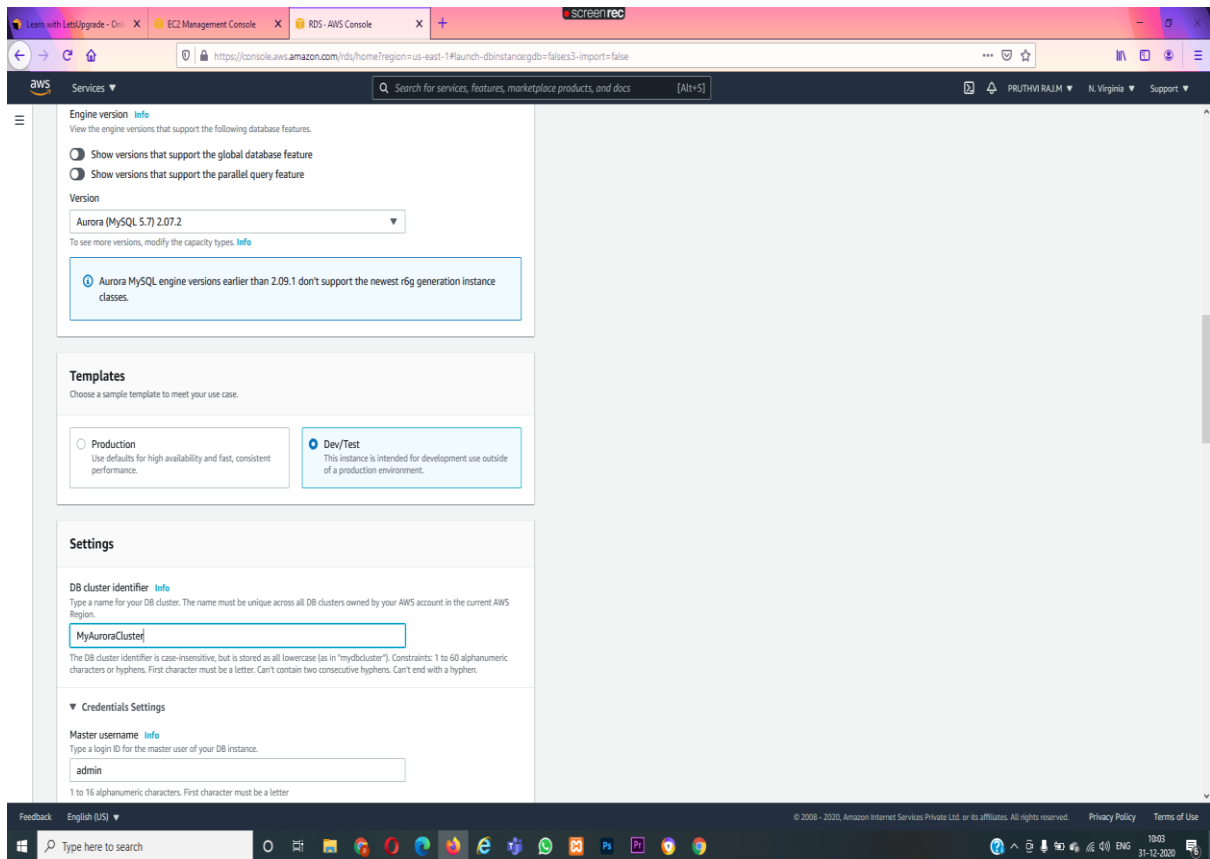
Cancel Previous Launch

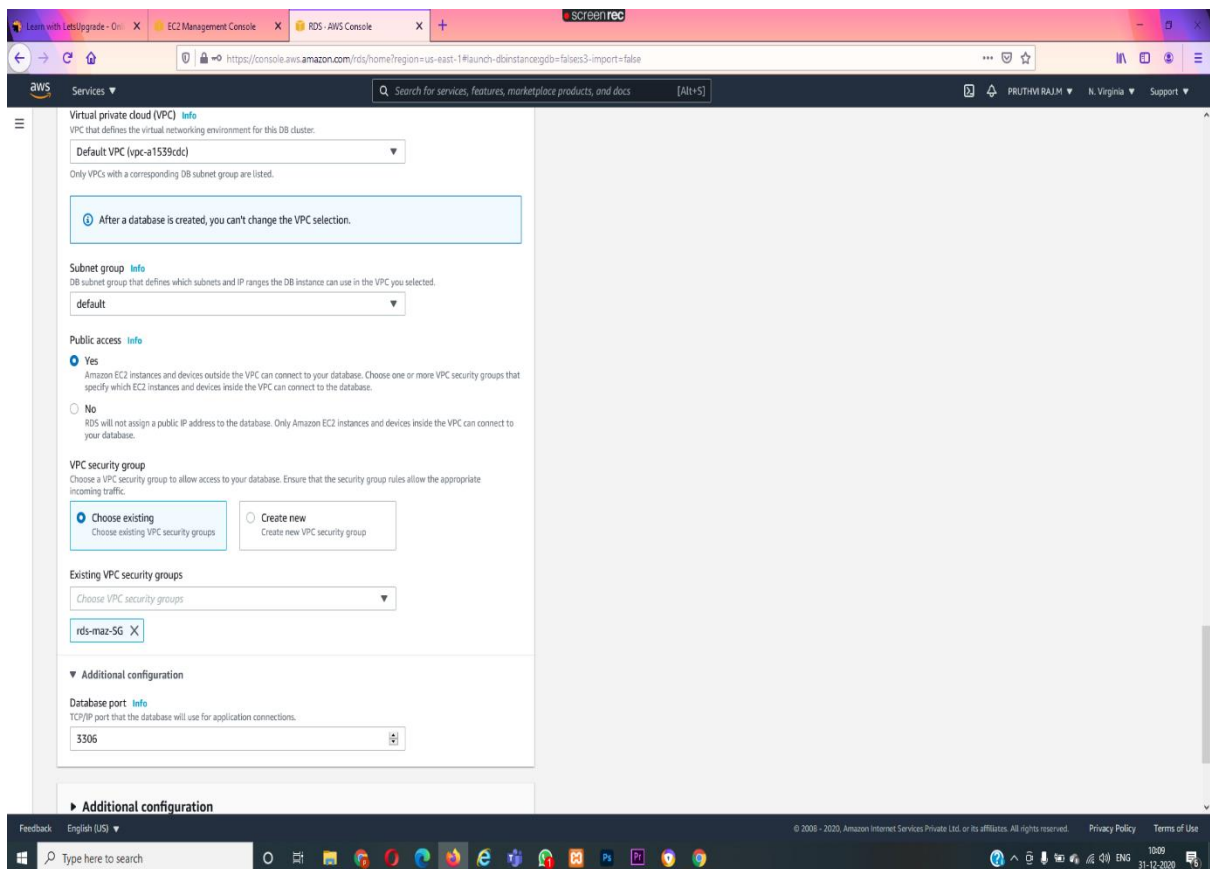
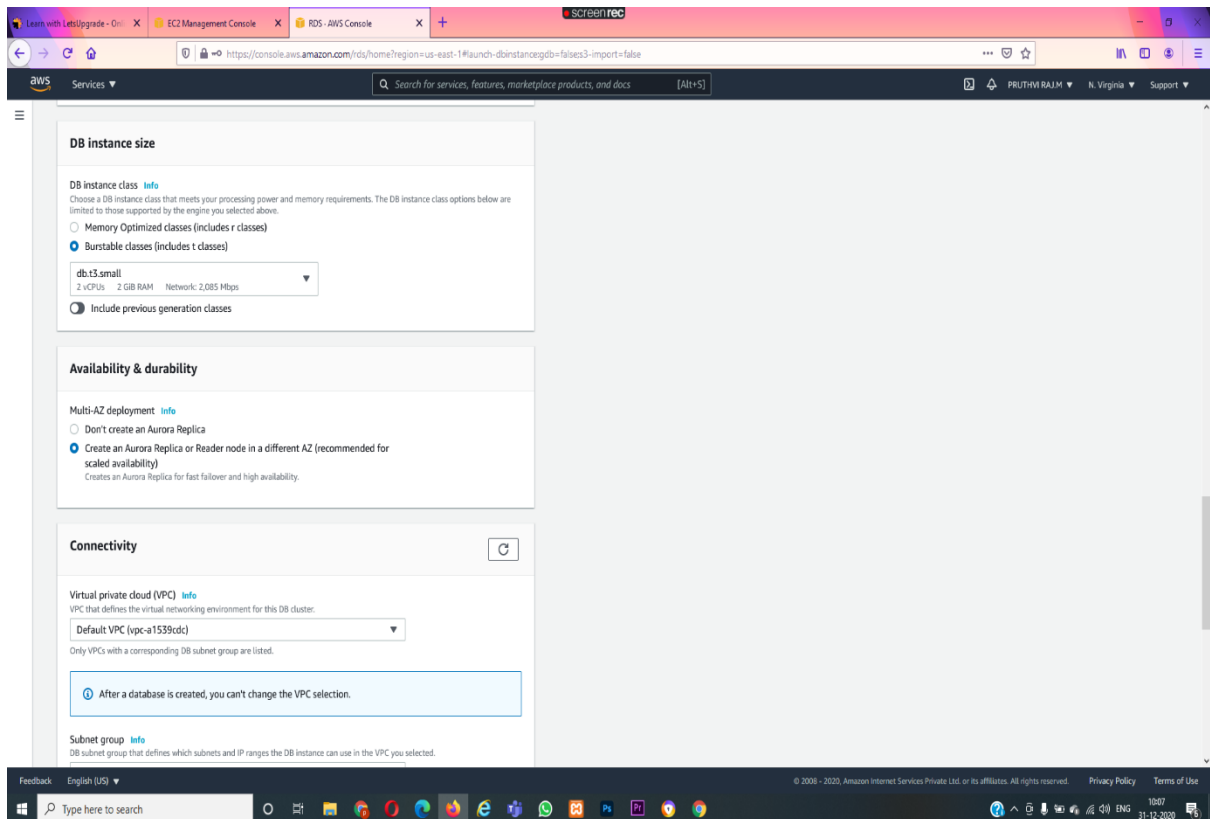
INSTANCE DETAILS

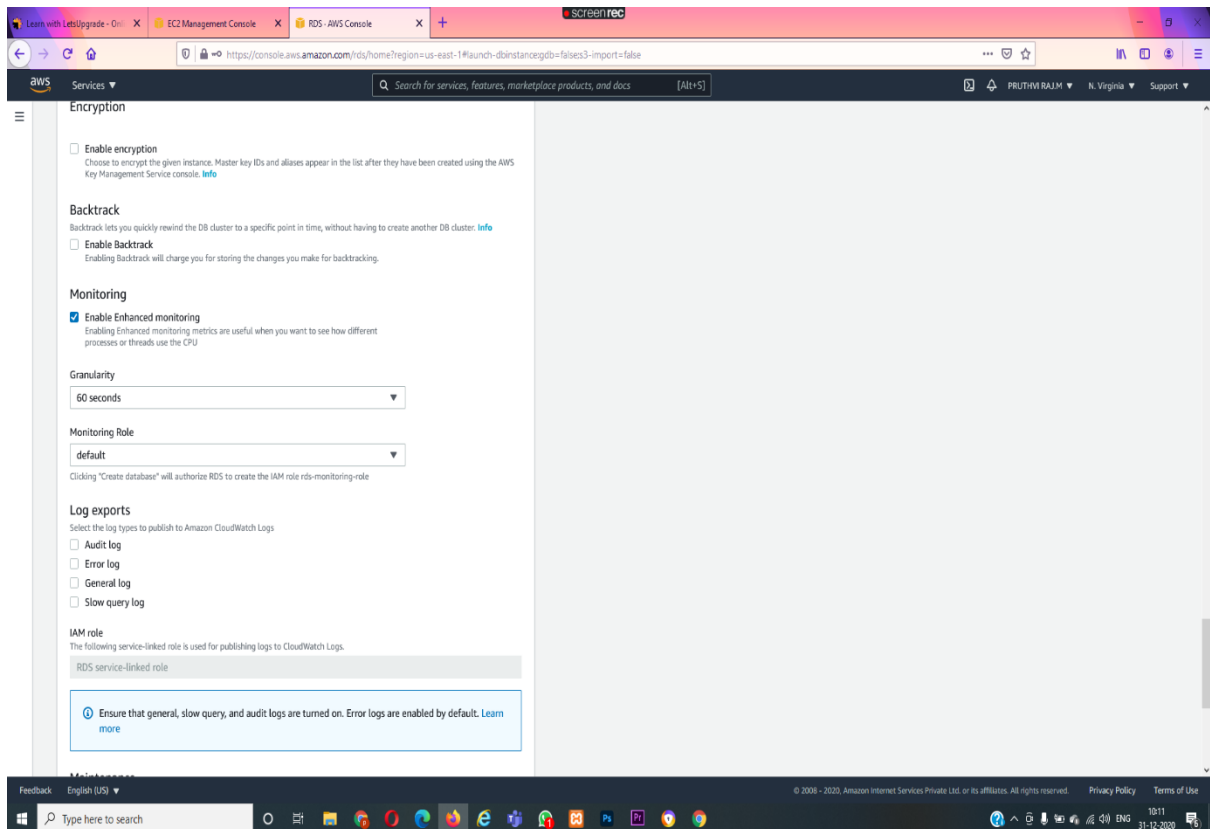
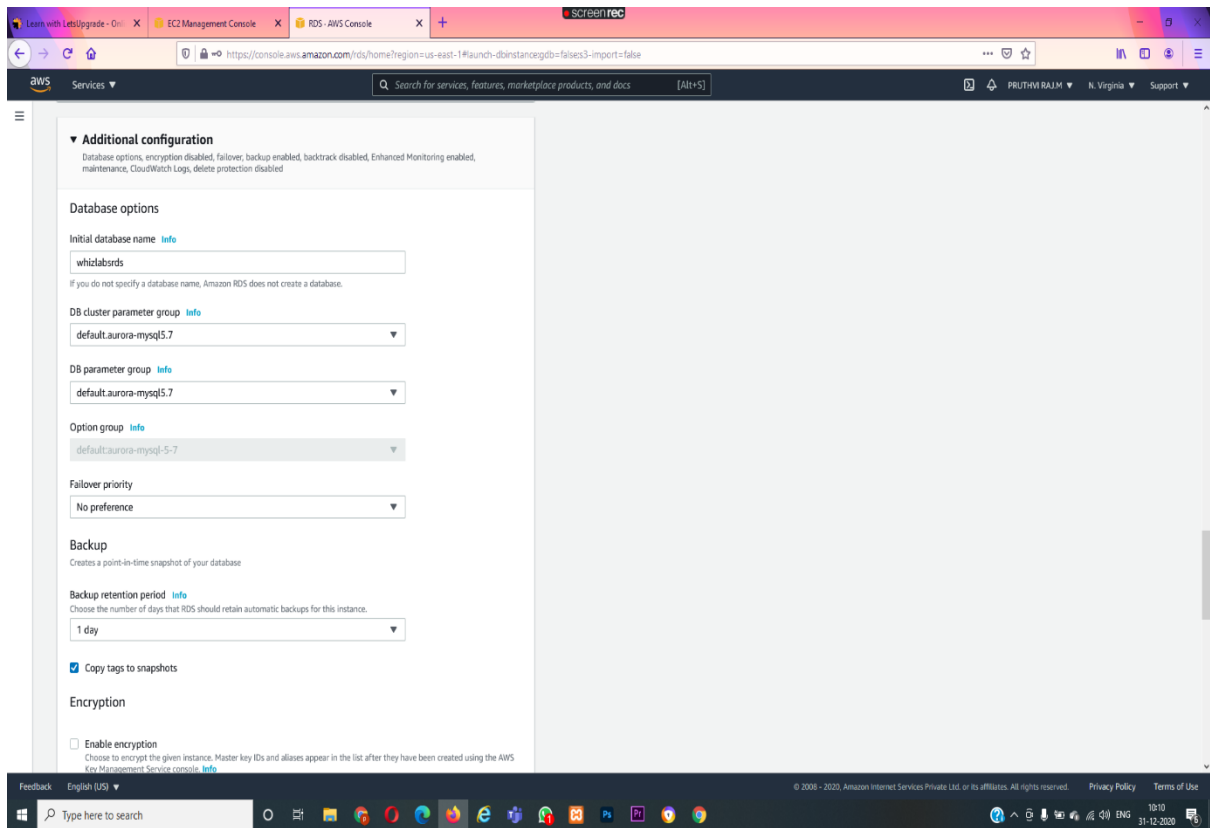
The screenshot displays the AWS Management Console interface. The top navigation bar includes the AWS logo, a search bar, and user information (PRUTHVI RAJ M, N. Virginia, Support). The left sidebar shows the 'Instances' menu. The main content area is titled 'Instances (1/1) Info' and shows a table with one instance: 'MyRdsEc2ser...' with ID 'i-01ed38509cfb8d9e', state 'Running', type 't2.micro', and status '2/2 checks...'. Below the table, the 'Details' tab for instance 'i-01ed38509cfb8d9e (MyRdsEc2server)' is selected. It shows various attributes: Instance ID, Instance state (Running), Instance type (t2.micro), AWS Compute Optimizer finding, Platform (Amazon Linux), Public IPv4 address (100.25.170.79), Public IPv4 DNS (ec2-100-25-170-79.compute-1.amazonaws.com), Private IPv4 addresses (172.31.55.190), Private IPv4 DNS (ip-172-31-55-190.ec2.internal), VPC ID (vpc-a1539cd0), Subnet ID (subnet-ceb87eff), IAM Role, and Monitoring (disabled).

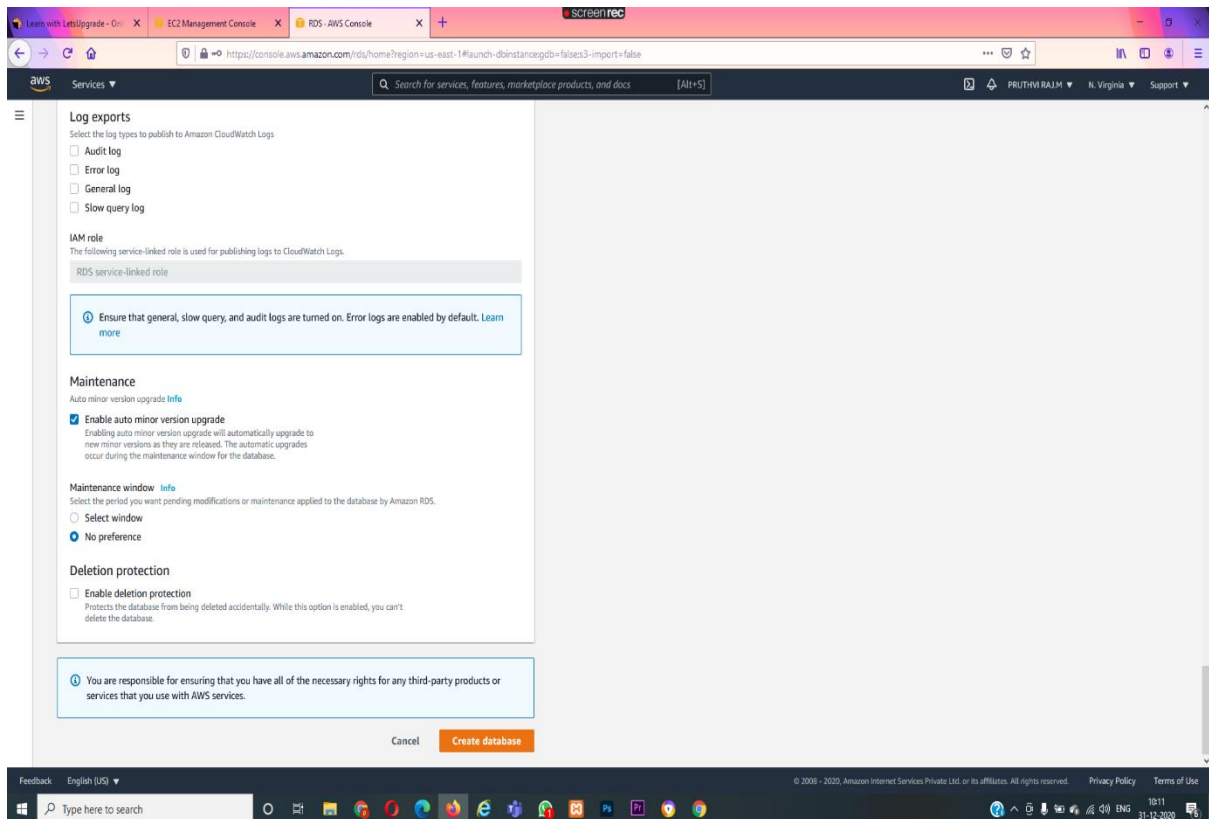
CREATING AN AMAZON AURORA DATABASE WITH MULTI-AZ ENABLED

The screenshot shows the 'Create database' wizard in the AWS RDS console. The 'Choose a database creation method' section has 'Standard create' selected. The 'Engine options' section shows 'Amazon Aurora' selected as the engine type. Under 'Edition', 'Amazon Aurora with MySQL compatibility' is selected. Under 'Capacity type', 'Provisioned' is selected. The wizard is in the 'Choose a database creation method' step, with 'Easy create' also available. The bottom of the screen shows the AWS footer with copyright information and links to Privacy Policy and Terms of Use.

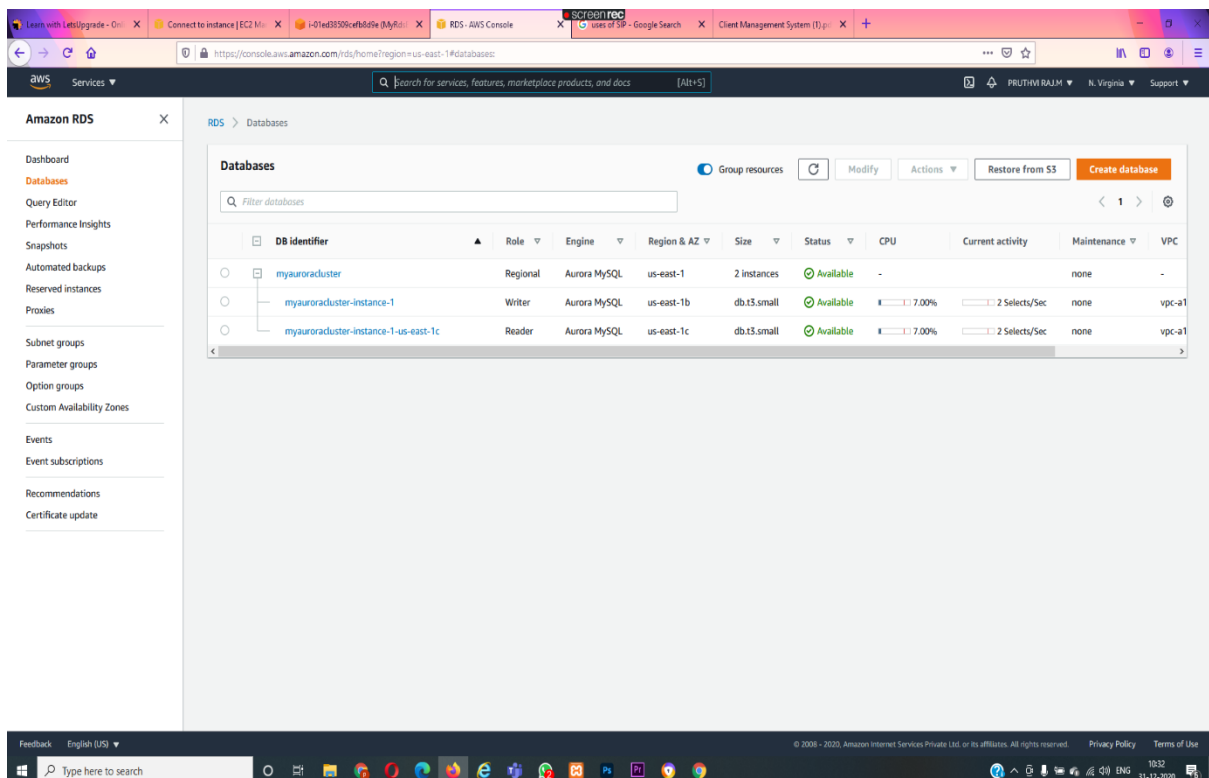


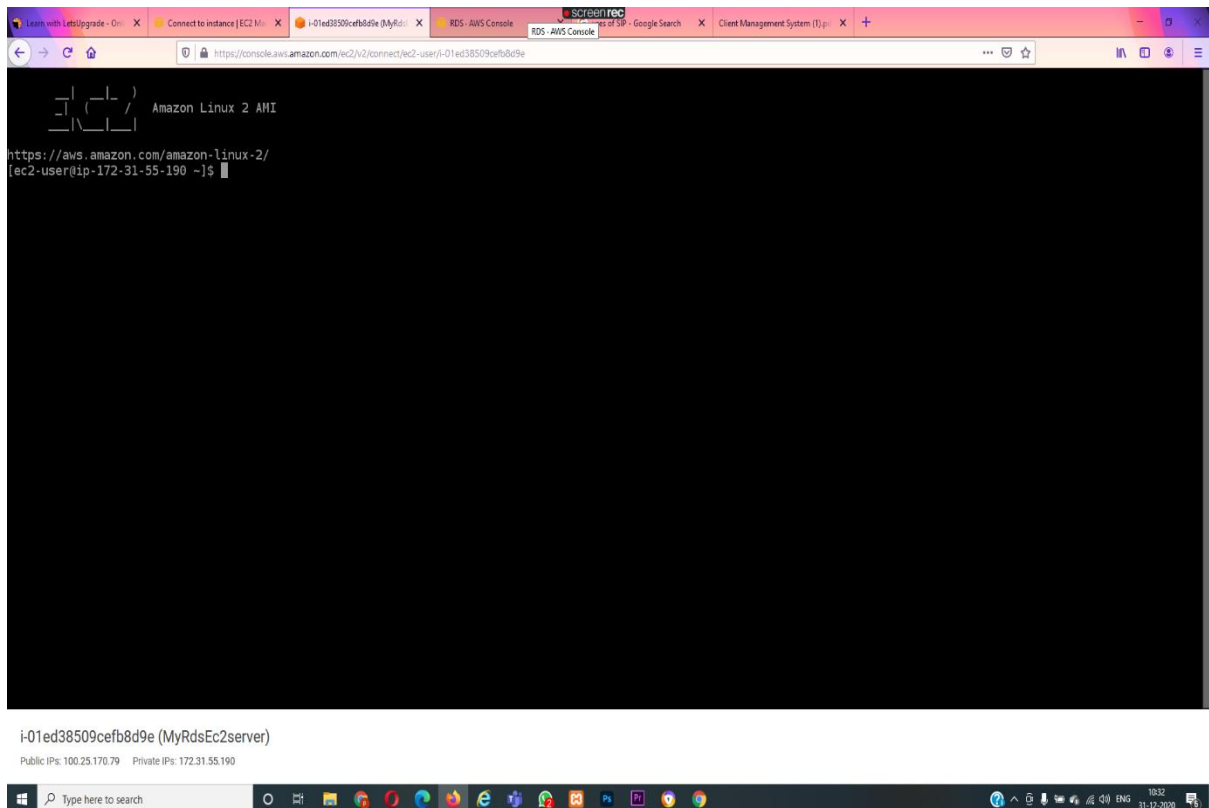




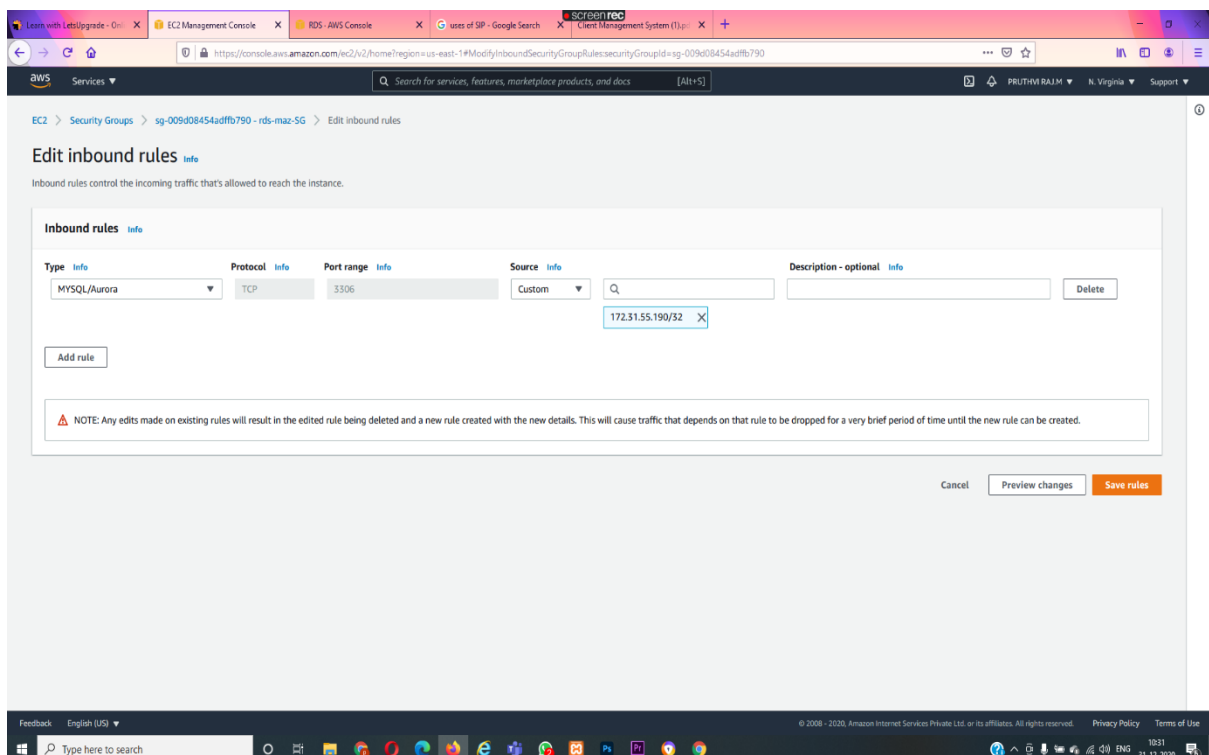


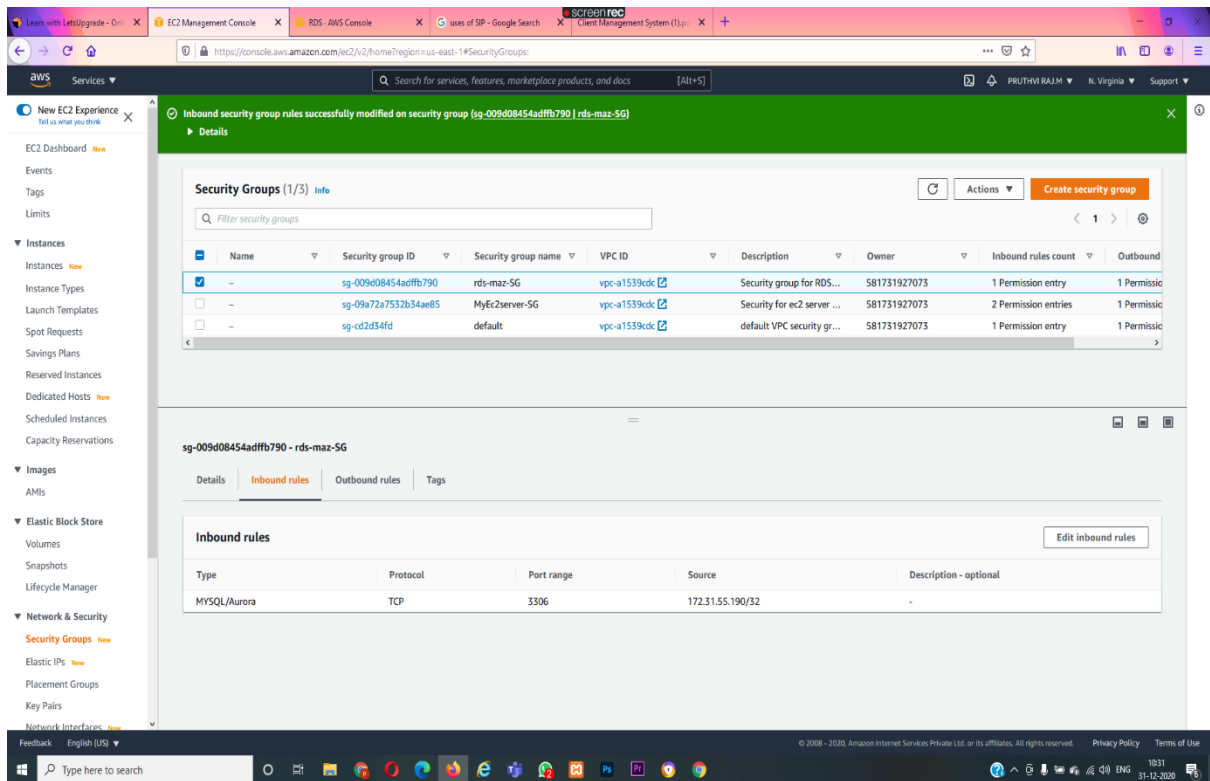
CONNECTING TO THE AURORA DATABASE ON RDS



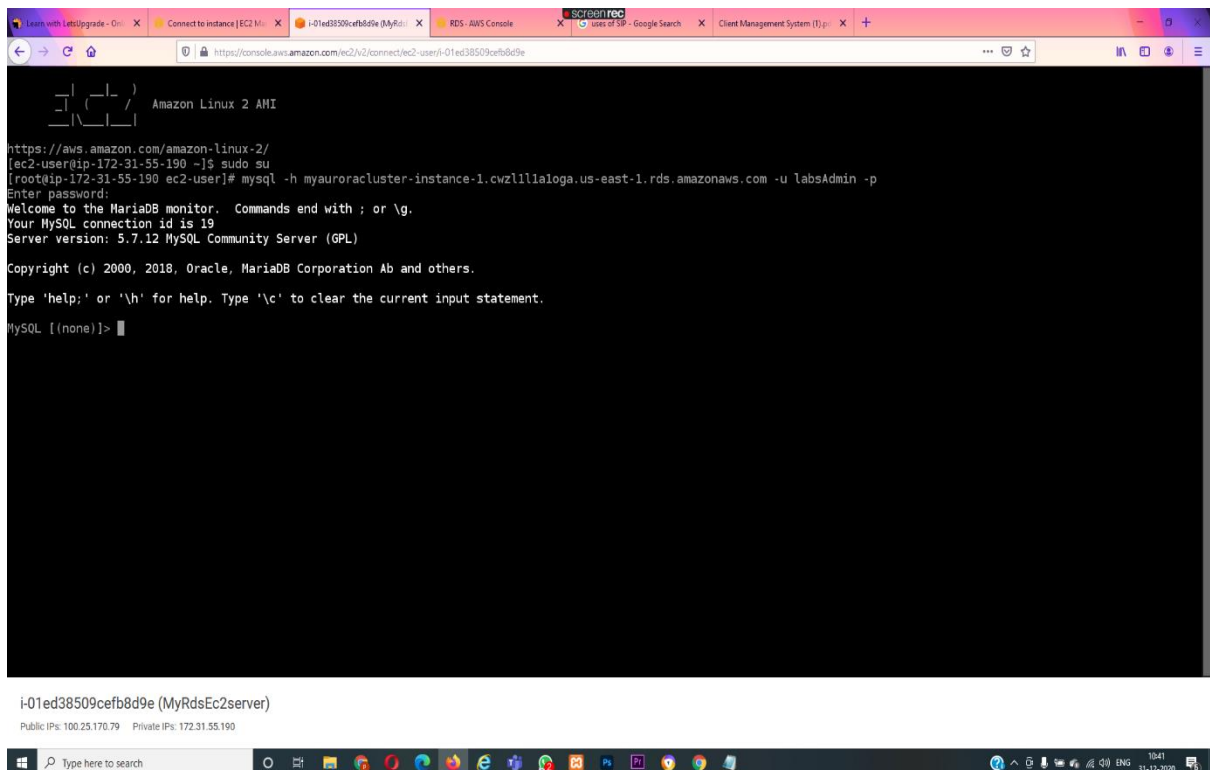


CHANGING SECURITY FOR RDS





EXICUTE DATABASE OPERATIONS VIA SSH



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)]> Create database auroro_db;
Query OK, 1 row affected (0.01 sec)

MySQL [(none)]> Use auroro_db;
Database changed
MySQL [auroro_db]> CREATE TABLE students ( subject_id INT AUTO_INCREMENT, subject_name
-> VARCHAR(255) NOT NULL, teacher VARCHAR(255), start_date DATE, lesson
-> TEXT, PRIMARY KEY (subject_id));
Query OK, 0 rows affected (0.04 sec)

MySQL [auroro_db]> INSERT INTO students(subject_name, teacher) VALUES ('English', 'John Taylor');
Query OK, 1 row affected (0.00 sec)

MySQL [auroro_db]> INSERT INTO students(subject_name, teacher) VALUES ('Science', 'Mary Smith');
Query OK, 1 row affected (0.03 sec)

MySQL [auroro_db]> INSERT INTO students(subject_name, teacher) VALUES ('Maths', 'Ted Miller');
Query OK, 1 row affected (0.01 sec)

MySQL [auroro_db]> INSERT INTO students(subject_name, teacher) VALUES ('Arts', 'Suzan Carpenter');
Query OK, 1 row affected (0.00 sec)

MySQL [auroro_db]> select * from students;
+-----+-----+-----+-----+-----+
| subject_id | subject_name | teacher | start_date | lesson |
+-----+-----+-----+-----+-----+
| 1 | English | John Taylor | NULL | NULL |
| 2 | Science | Mary Smith | NULL | NULL |
| 3 | Maths | Ted Miller | NULL | NULL |
| 4 | Arts | Suzan Carpenter | NULL | NULL |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

MySQL [auroro_db]> exit
Bye
[root@ip-172-31-55-190 ec2-user]#
```

i-01ed38509cefb8d9e (MyRdsEc2server)

Public IPs: 100.25.170.79 Private IPs: 172.31.55.190

FORCING A FAILOVER TO TEST MULTI-AZ

aws Services Search for services, features, marketplace products, and docs [Alt+S]

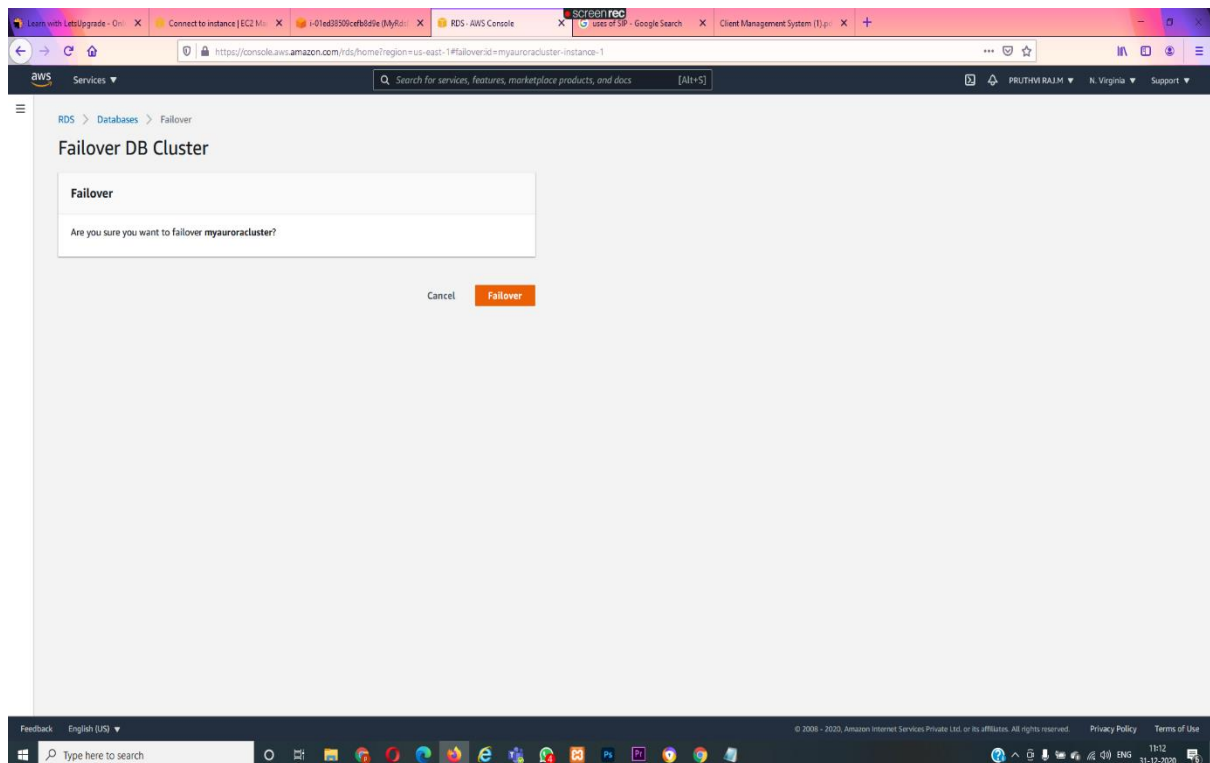
PRUTHI RAJ M N. Virginia Support

Databases

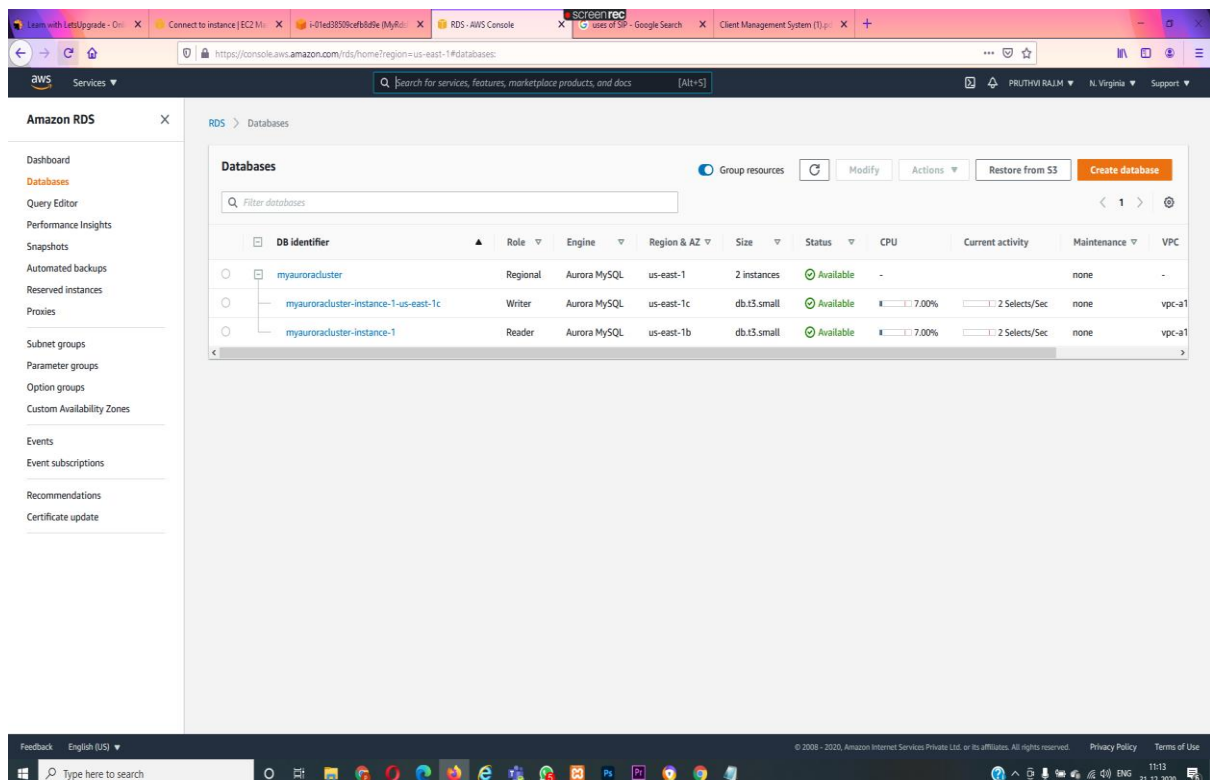
Filter databases

DB identifier	Role	Engine	Region & AZ	Size	Status	CPU	Current activity	Maintenance	VPC	Multi-AZ
myauroracluster	Regional	Aurora MySQL	us-east-1	2 instances	Available	-	-	none	-	-
myauroracluster-instance-1	Writer	Aurora MySQL	us-east-1b	db.t3.small	Available	7.00%	2 Selects/Sec	none	vpc-a1539cdc	2 Zones
myauroracluster-instance-1-us-east-1c	Reader	Aurora MySQL	us-east-1c	db.t3.small	Available	7.00%	2 Selects/Sec	none	vpc-a1539cdc	2 Zones

CREATING FAILOVER OF THE WRITER



CHANGING OF WRITER AND READER AFTER FAILOVER



TESTING THE FAILOVER CONDITION

The image shows a terminal window with a dark background and white text. At the top, there is a browser address bar displaying the URL: https://console.aws.amazon.com/ec2/v2/home?ec2-user=i-01ed38509cefb8d9e. Below the address bar, the terminal output shows a successful login from an EC2 instance. The user is 'ec2-user' and the host is 'ec2-18-206-107-24.compute-1.amazonaws.com'. The terminal displays the Amazon Linux 2 AMI logo and the prompt '[ec2-user@ip-172-31-55-190 ~]\$'. The user runs 'sudo su' to become the root user. The root user then runs 'mysql -h myauroracluster-instance-1-us-east-1c.cwz1ll1a1oga.us-east-1.rds.amazonaws.com -u labsAdmin -p'. The MySQL prompt 'mysql>' is shown, followed by the user entering the password 'labsAdmin'. The terminal then displays the MySQL version '5.7.12 MySQL Community Server (GPL)' and the copyright information. The user enters 'help;' and the terminal displays the help text. The user then enters 'quit;' and the terminal displays 'mysql>'. The terminal window is titled 'i-01ed38509cefb8d9e (MyRdsEc2server)'. The taskbar at the bottom shows various application icons and the system clock.

A screenshot of a terminal window running on an Amazon Linux 2 AMI. The terminal shows the following sequence of events:

- A login message: "Last login: Thu Dec 31 05:22:17 2020 from ec2-18-206-107-24.compute-1.amazonaws.com"
- The user logs in as root after entering the password.
- The user runs `mysql -h myauroracluster-instance-1-us-east-1c.cwzll1aloga.us-east-1.rds.amazonaws.com -u labsAdmin -p`.
- The MySQL monitor starts, displaying the welcome message and connection details.
- The user enters the command `Show databases;`.
- The output lists six databases: information_schema, auroro_db, mysql, performance_schema, sys, and whizlabsrds.

MySQL [(none)]> Show databases;
+-----+
| Database |
+-----+
| information_schema |
| auroro_db |
| mysql |
| performance_schema |
| sys |
| whizlabsrds |
+-----+

6 rows in set (0.03 sec)

MySQL [(none)]>

```
Learn with Let's Upgrade - O... X Connect to instance [EC2 M... X i-01ed38509cefb8d9e (MyRds) X RDS - AWS Console X screenrec X uses of SP - Google Search X Client Management System (U... X +
https://console.aws.amazon.com/ec2/v2/connect/ec2-user/i-01ed38509cefb8d9e
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
MySQL [(none)]> Show databases;
+-----+
| Database |
+-----+
| information_schema |
| auroro_db |
| mysql |
| performance_schema |
| sys |
| whizlabsrds |
+-----+
6 rows in set (0.03 sec)

MySQL [(none)]> use auroro_db;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MySQL [auroro_db]> show tables;
+-----+
| Tables_in_auroro_db |
+-----+
| students |
+-----+
1 row in set (0.00 sec)

MySQL [auroro_db]> select * from students;
+-----+
| subject_id | subject_name | teacher | start_date | lesson |
+-----+
| 1 | English | John Taylor | NULL | NULL |
| 2 | Science | Mary Smith | NULL | NULL |
| 3 | Maths | Ted Miller | NULL | NULL |
| 4 | Arts | Suzan Carpenter | NULL | NULL |
+-----+
4 rows in set (0.00 sec)

MySQL [auroro_db]> █

i-01ed38509cefb8d9e (MyRdsEc2server)
Public IPs: 100.25.170.79 Private IPs: 172.31.55.190
Type here to search
11:18
31-12-2020
```

THANK YOU