

Module-6 Case Study

Problem Statement: You work for XYZ Corporation. Your company has multiple branch offices all over the country. They want to deploy their application on AWS that reads data from the user's devices and sends reports to all the branches. The application also requires executing complex relational joins and updates. They want high availability for their application.

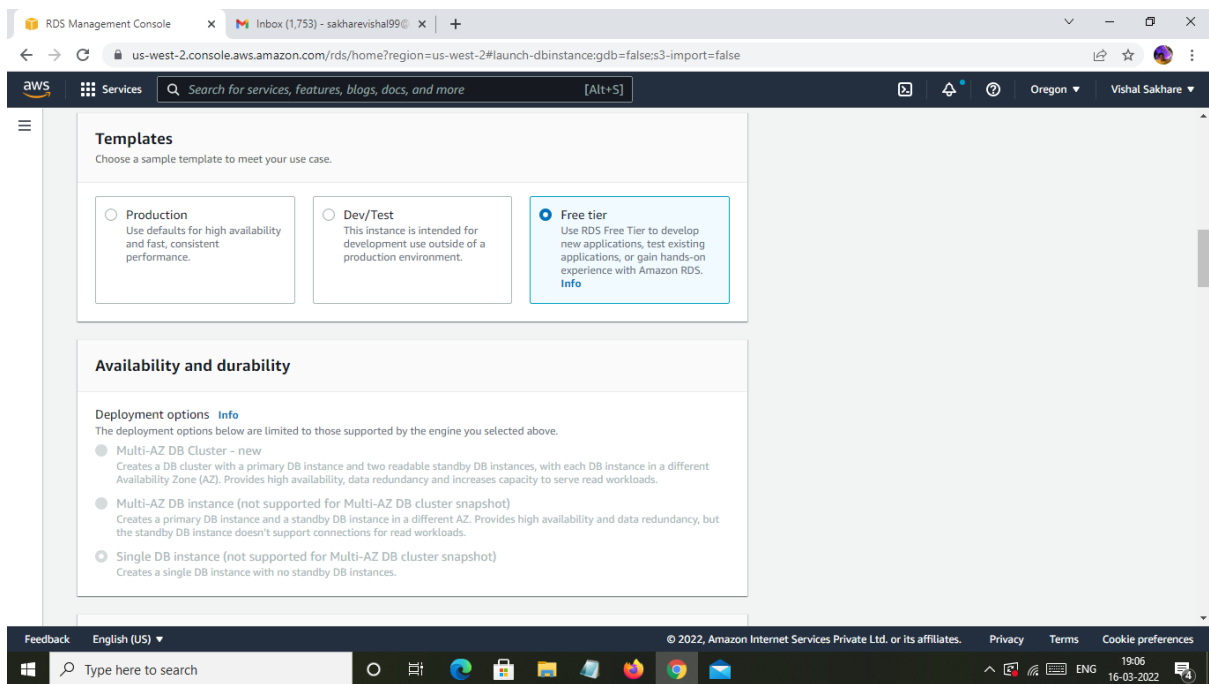
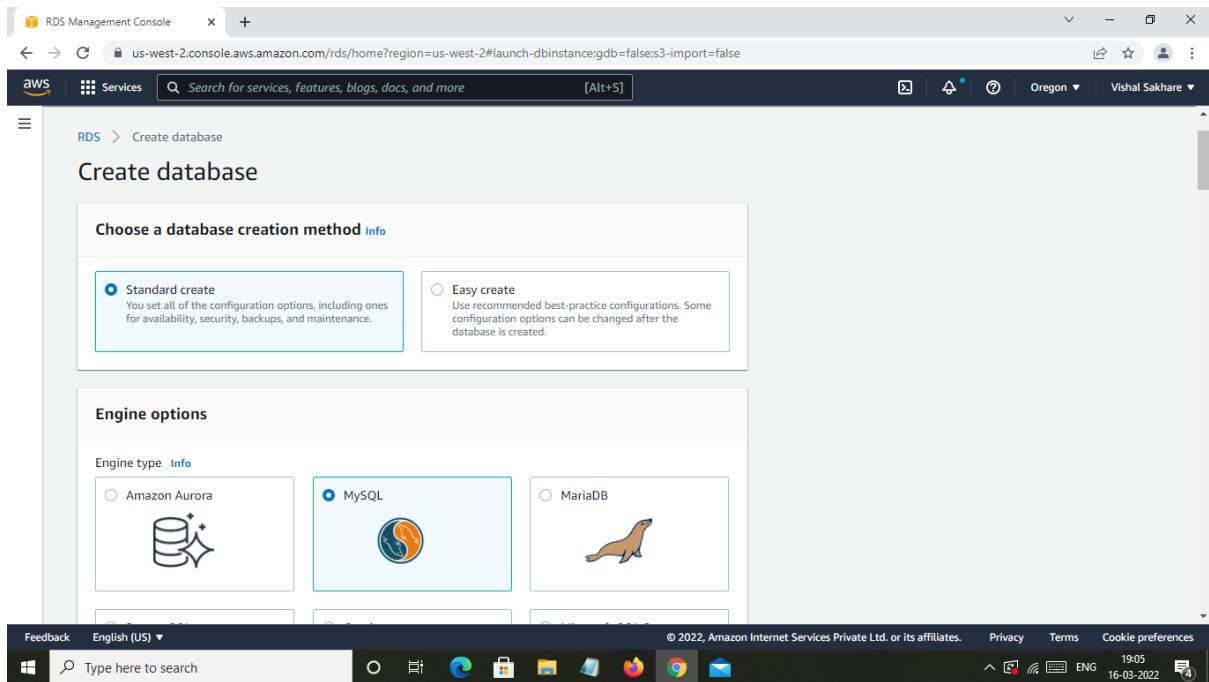
You are asked to perform the following tasks:

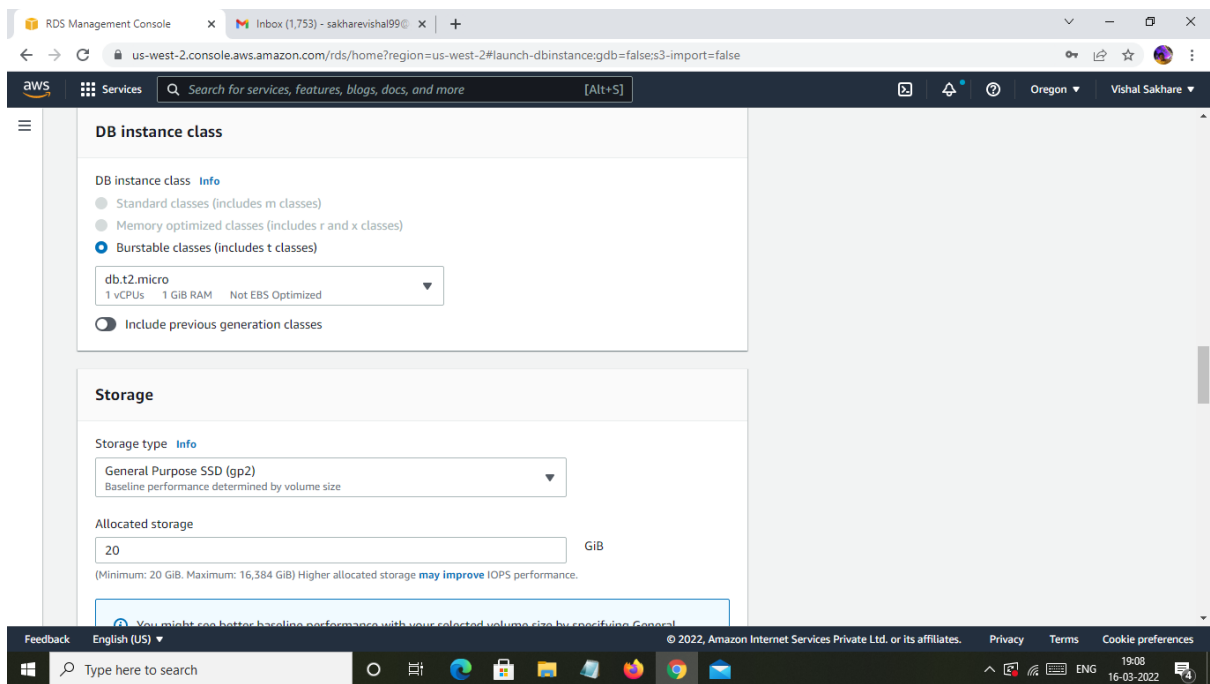
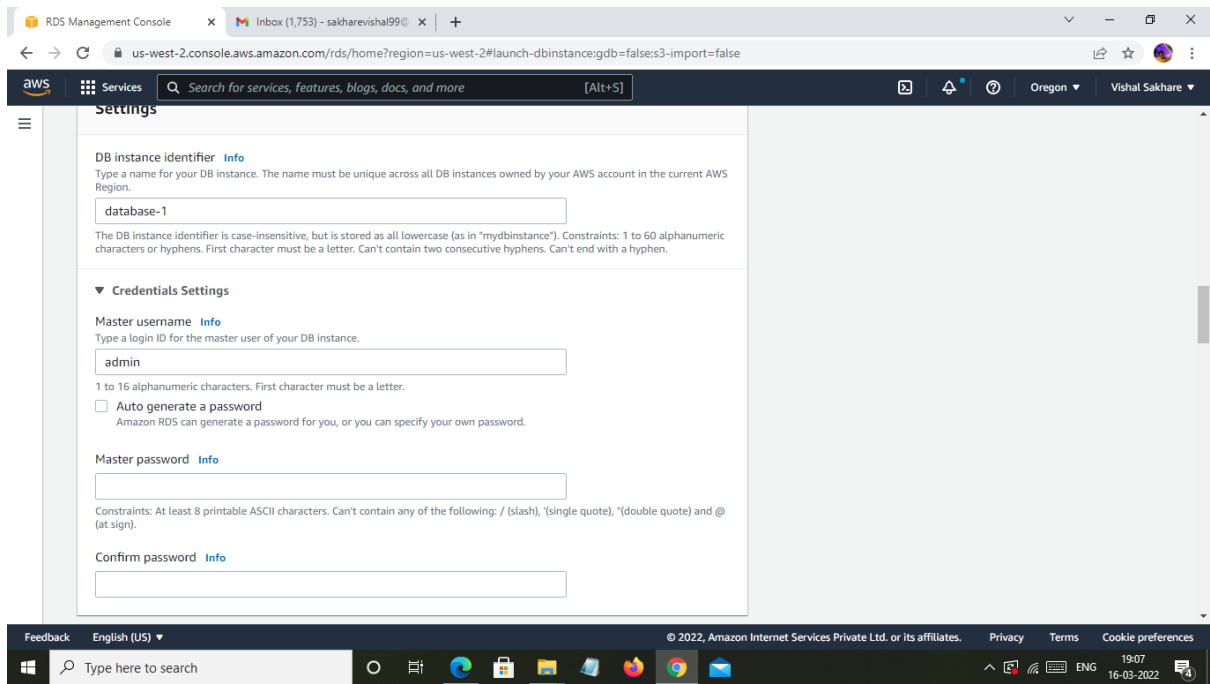
1. Build a highly scalable database and make sure that it's always available and accessible. Manage automated backup for this database with retention period of 2 days.
2. Build a Database architecture which lets your application read data from different regions
3. Establish a Database Architecture to process the data collected for near real-time analysis

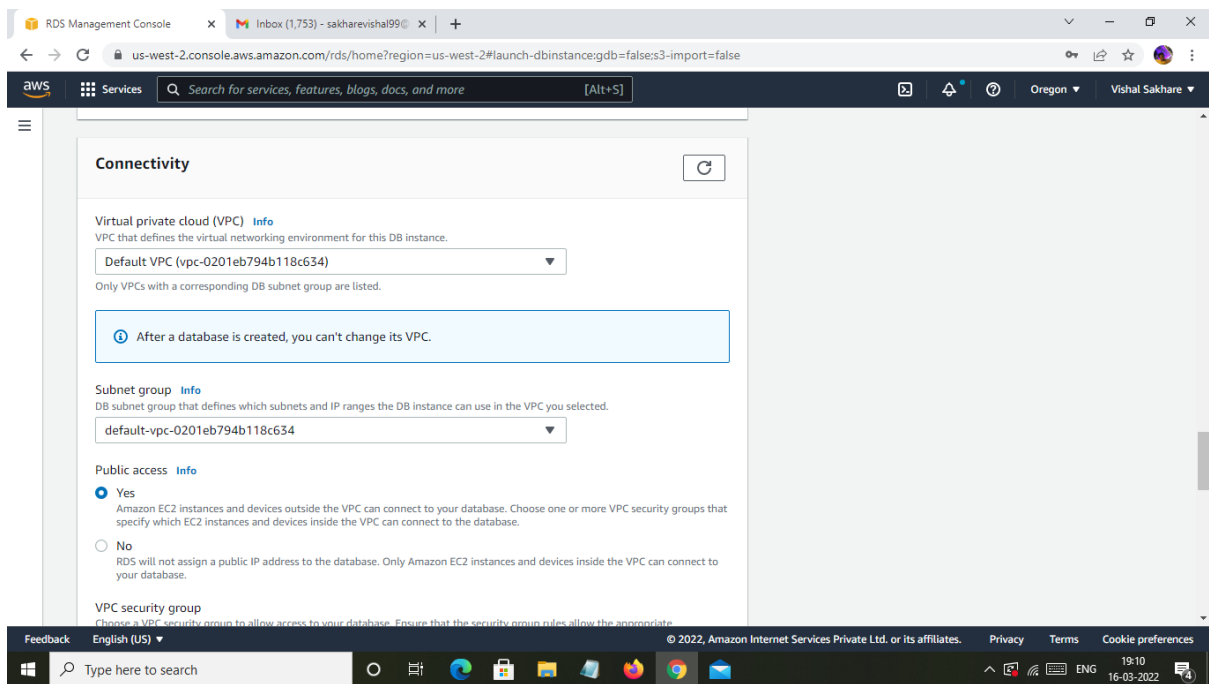
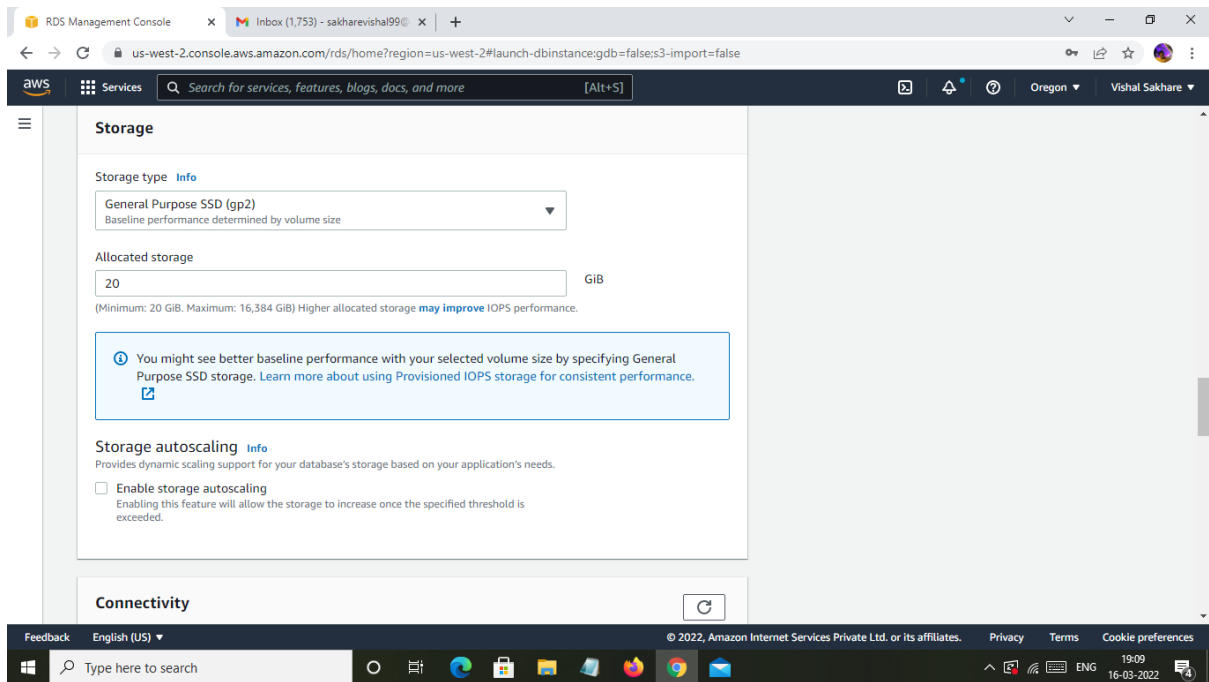
As the user base of the application increases, your corporation observed a significant latency in the transfer of data to the branches. Your company realized that most of the time of the time, same kind of data is being fetched and sent to the branches.

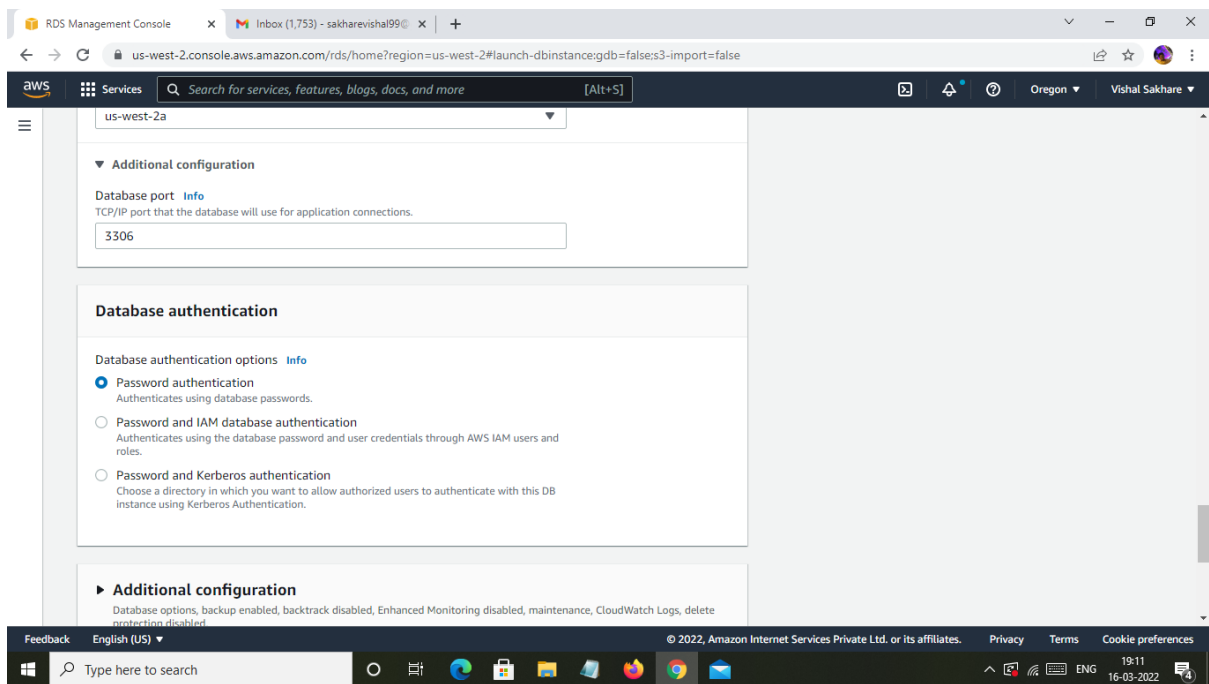
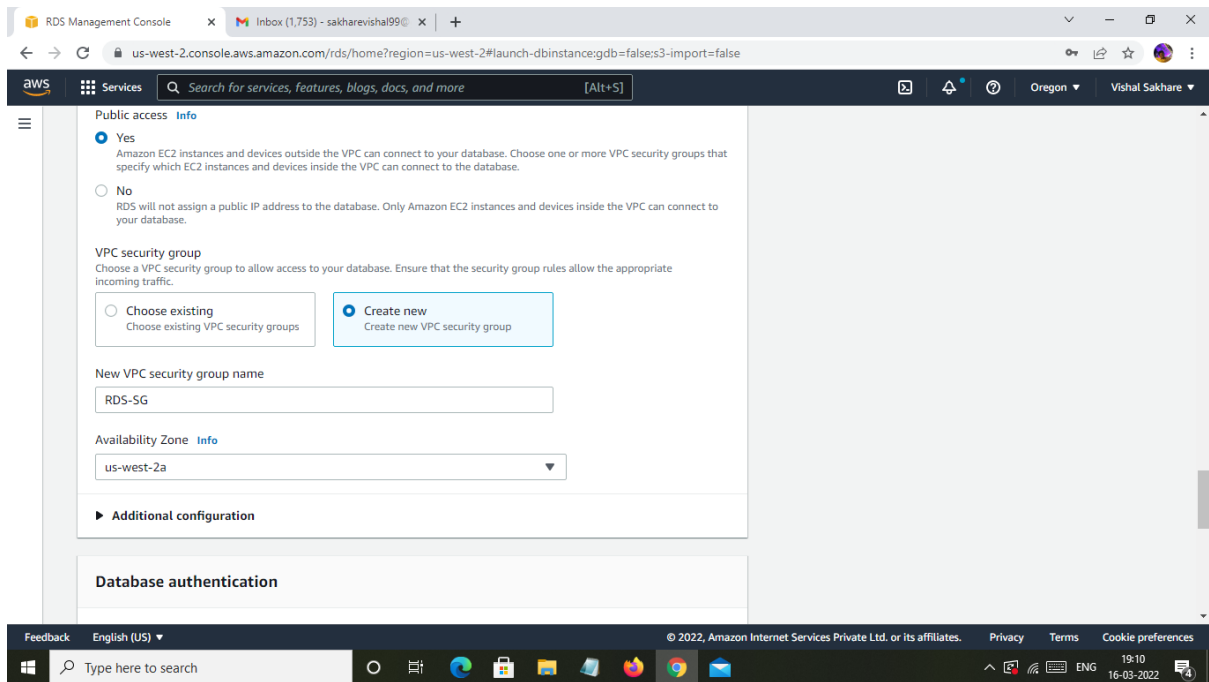
You are asked to:

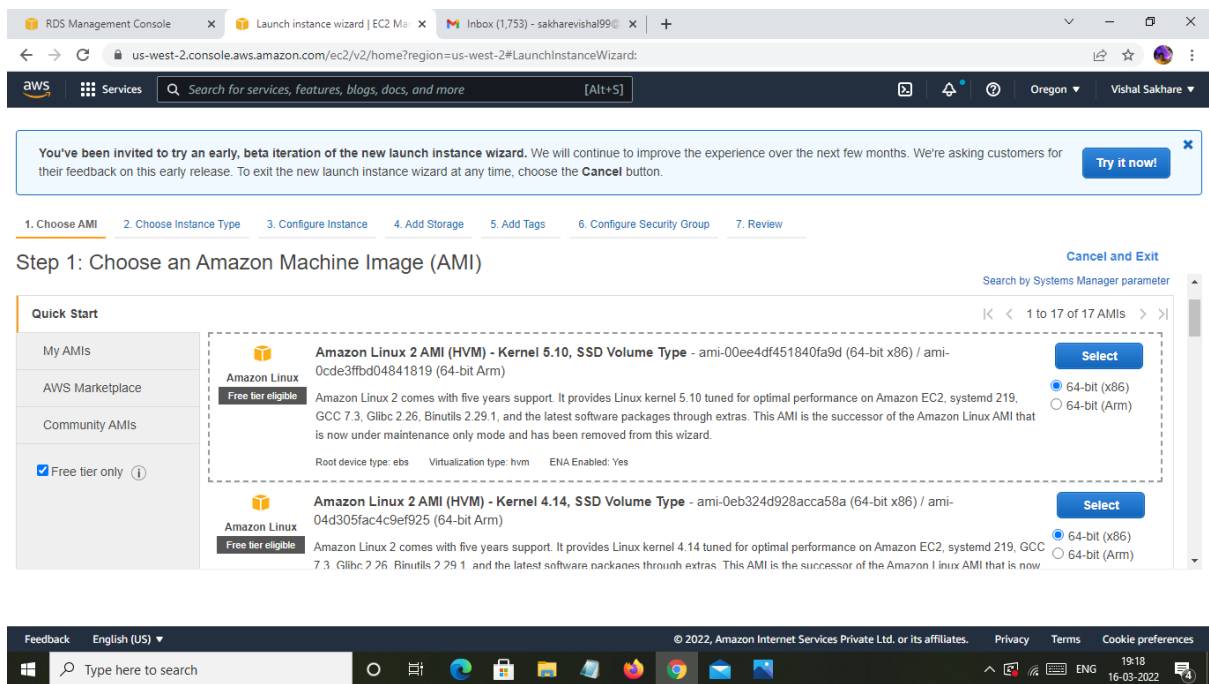
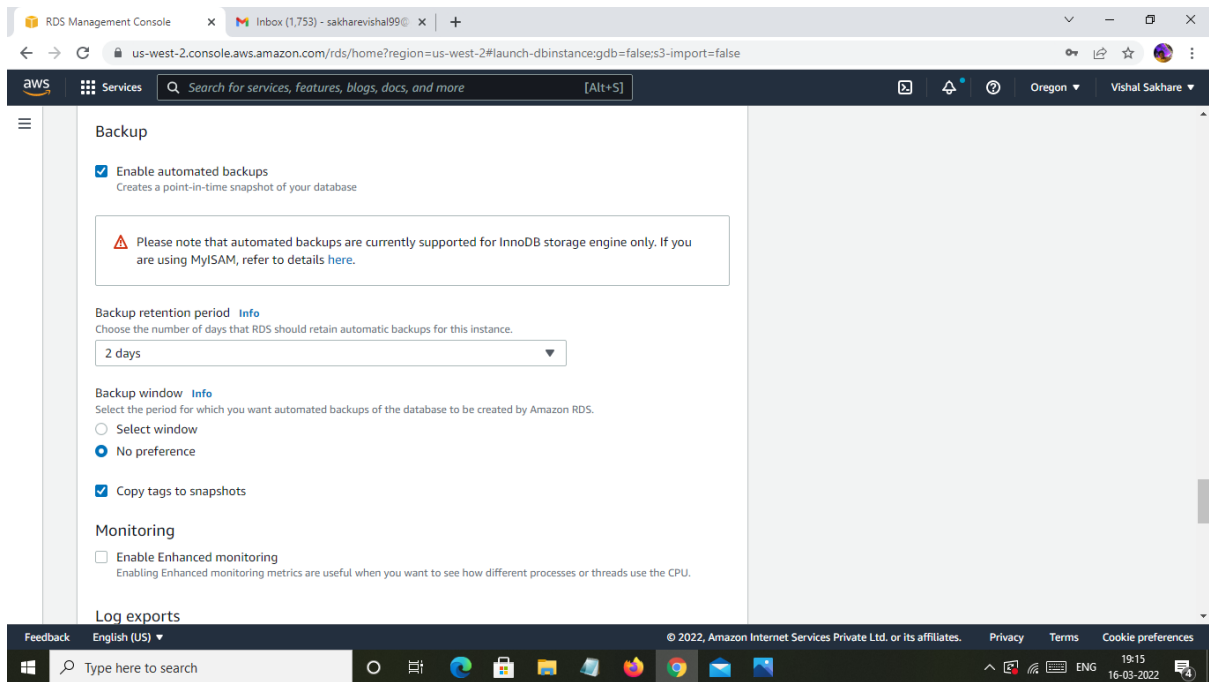
1. Find and implement the solution in order to resolve the latency issues











```
root@ip-172-31-46-25/home/ec2-user
No packages marked for update
[ec2-user@ip-172-31-46-25 ~]$ sudo su
[root@ip-172-31-46-25 ec2-user]# sudo yum update
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
No packages marked for update
[root@ip-172-31-46-25 ec2-user]# sudo su
[root@ip-172-31-46-25 ec2-user]# yum install -y mysql
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 1:5.5.68-1.amzn2 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package Arch Version Repository Size
=====
Installing:
mariadb x86_64 1:5.5.68-1.amzn2 amzn2-core 8.8 M
=====
Transaction Summary
=====
Install 1 Package

Total download size: 8.8 M
Installed size: 49 M
Downloading packages:
mariadb-5.5.68-1.amzn2.x86_64.rpm | 8.8 MB 00:00
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Installing : 1:mariadb-5.5.68-1.amzn2.x86_64 1/1
Verifying : 1:mariadb-5.5.68-1.amzn2.x86_64 1/1
Installed:
mariadb.x86_64 1:5.5.68-1.amzn2

Complete!
[root@ip-172-31-46-25 ec2-user]# mysql -h database-1.comuxtbtbfmb.us-west-2.rds.amazonaws.com -u admin -p db1
Enter password:
ERROR 2003 (HY000): Can't connect to MySQL server on 'database-1.comuxtbtbfmb.us-west-2.rds.amazonaws.com' (110)
[root@ip-172-31-46-25 ec2-user]#
```

RDS Management Console

Launch instance wizard | EC2 Ma

Inbox (1,753) - sakharevishal99@

error 2003 (hy000) mysql - Goo

us-west-2.console.aws.amazon.com/ec2/v2/home?region=us-west-2#LaunchInstanceWizard:

Services

Type here to search

[Alt+S]

Oregon

Vishal Sakhare

You've been invited to try an early, beta iteration of the new launch instance wizard. We will continue to improve the experience over the next few months. We're asking customers for their feedback on this early release. To exit the new launch instance wizard at any time, choose the **Cancel** button.

Try it now!

1. Choose AMI

2. Choose Instance Type

3. Configure Instance

4. Add Storage

5. Add Tags

6. Configure Security Group

7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Quick Start (3)

My AMIs (0)

AWS Marketplace (1131)

Community AMIs (36759)

☒ Free tier only ⓘ

Free tier eligible

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0892d3c7ee96c0bf7 (64-bit x86) / ami-078279691222aee06 (64-bit Arm)

Ubuntu Server 20.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-074251216af698218 (64-bit x86) / ami-08d20da2261ebe2ec (64-bit Arm)

Select

64-bit (x86)

Feedback

English (US)

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Cookie preferences

rds-KP1.pem

Show all

```
ubuntu@ip-172-31-44-139: ~
s [20.7 KB]
Get:41 http://security.ubuntu.com/ubuntu focal-security/multiverse Translation-e
n [5196 B]
Get:42 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 c-n-f M
etadate [500 B]
Fetched 22.1 KB in 4s (5541 KB/s)
Reading package lists... Done
ubuntu@ip-172-31-44-139:~$ sudo apt-get install mysql-client
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  mysql-client-8.0 mysql-client-core-8.0 mysql-common
The following NEW packages will be installed:
  mysql-client mysql-client-8.0 mysql-client-core-8.0 mysql-common
0 upgraded, 4 newly installed, 0 to remove and 86 not upgraded.
Need to get 4468 kB of archives.
After this operation, 67.1 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us-west-2.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client-core-8.0 amd64 8.0.28-0ubuntu0.20.04.3 [4429 kB]
Get:2 http://us-west-2.ec2.archive.ubuntu.com/ubuntu focal/main amd64 mysql-common all 5.8+1.0.5ubuntu2 [7496 B]
Get:3 http://us-west-2.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client-8.0 amd64 8.0.28-0ubuntu0.20.04.3 [22.0 kB]
Get:4 http://us-west-2.ec2.archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client all 8.0.28-0ubuntu0.20.04.3 [9420 B]
Fetched 4468 kB in 0s (23.3 MB/s)
Selecting previously unselected package mysql-client-core-8.0.
(Reading database ... 63895 files and directories currently installed.)
Preparing to unpack .../mysql-client-core-8.0_8.0.28-0ubuntu0.20.04.3_amd64.deb ...
Unpacking mysql-client-core-8.0 (8.0.28-0ubuntu0.20.04.3) ...
Selecting previously unselected package mysql-common.
Preparing to unpack .../mysql-common_5.8+1.0.5ubuntu2_all.deb ...
Unpacking mysql-common (5.8+1.0.5ubuntu2) ...
Selecting previously unselected package mysql-client-8.0.
Preparing to unpack .../mysql-client-8.0_8.0.28-0ubuntu0.20.04.3_amd64.deb ...
Unpacking mysql-client-8.0 (8.0.28-0ubuntu0.20.04.3) ...
Selecting previously unselected package mysql-client.
Preparing to unpack .../mysql-client_8.0.28-0ubuntu0.20.04.3_all.deb ...
Unpacking mysql-client (8.0.28-0ubuntu0.20.04.3) ...
Setting up mysql-common (5.8+1.0.5ubuntu2) ...
update-alternatives: using /etc/mysql/my.cnf.fallback to provide /etc/mysql/my.cnf (my.cnf) in auto mode
Setting up mysql-client-core-8.0 (8.0.28-0ubuntu0.20.04.3) ...
Setting up mysql-client-8.0 (8.0.28-0ubuntu0.20.04.3) ...
Setting up mysql-client (8.0.28-0ubuntu0.20.04.3) ...
Processing triggers for man-db (2.9.1-1) ...
ubuntu@ip-172-31-44-139:~$
```

```
us-west-2.console.aws.amazon.com/ec2/v2/connect/ubuntu/i-0589868c1dc0692a7
Enter password:
ERROR 1049 (42000): Unknown database '3306'
ubuntu@ip-172-31-44-139:~$ sudo mysql -h database-1.comuxtbtbtfmb.us-west-2.rds.amazonaws.com -u admin -p 3306
Enter password:
ERROR 1049 (42000): Unknown database '3306'
ubuntu@ip-172-31-44-139:~$ sudo mysql -h database-1.comuxtbtbtfmb.us-west-2.rds.amazonaws.com -u admin -p 3306
Enter password:
ERROR 1049 (42000): Unknown database '3306'
ubuntu@ip-172-31-44-139:~$ sudo mysql -h database-1.comuxtbtbtfmb.us-west-2.rds.amazonaws.com -u admin -P 3306 -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 31
Server version: 8.0.27 Source distribution

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owners.

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

mysql>
```

i-0589868c1dc0692a7 (RDS-ubuntu)

Public IPs: 34.220.22.116 Private IPs: 172.31.44.139

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rds-ubuntu.pem ^ rds-KP1.pem ^ Show all x
Type here to search
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RDS Manager x EC2 Manager x EC2 Manager x Instances | E x Connect to i- i-0589868c1c i-0589868c1c x Inbox (1,753) x error 2003 (h) x + -

us-west-2.console.aws.amazon.com/ec2/v2/connect/ubuntu/i-0589868c1dc0692a7

```
Enter password:
ERROR 1049 (42000): Unknown database '3306'
ubuntu@ip-172-31-44-139:~$ sudo mysql -h database-1.comuxttbtmb.us-west-2.rds.amazonaws.com -u admin -p 3306
Enter password:
ERROR 1049 (42000): Unknown database '3306'
ubuntu@ip-172-31-44-139:~$ sudo mysql -h database-1.comuxttbtmb.us-west-2.rds.amazonaws.com -u admin -p 3306
Enter password:
ERROR 1049 (42000): Unknown database '3306'
ubuntu@ip-172-31-44-139:~$ sudo mysql -h database-1.comuxttbtmb.us-west-2.rds.amazonaws.com -u admin -P 3306 -p
Enter password:
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Your MySQL connection id is 31
Server version: 8.0.27 Source distribution

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owners.

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

mysql>
```

i-0589868c1dc0692a7 (RDS-ubuntu)

Public IPs: 34.220.22.116 Private IPs: 172.31.44.139

rds-ubuntu.pem ^ rds-KP1.pem ^ Show all x

Windows Type here to search

20-28 16-03-2022