Department of Computer Science & Engineering
Premier University.

CSE 482: Contemporary Course of Computer Science Laboratory.

Build Your DB Server and Interact With Your DB Using an App

Submitted By:

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Section	**C**
Semester	**7th**
Submission Date	**2/28/2026**

Remarks

Lab Report

Lab 5: Build Your DB Server and Interact With Your DB Using an App

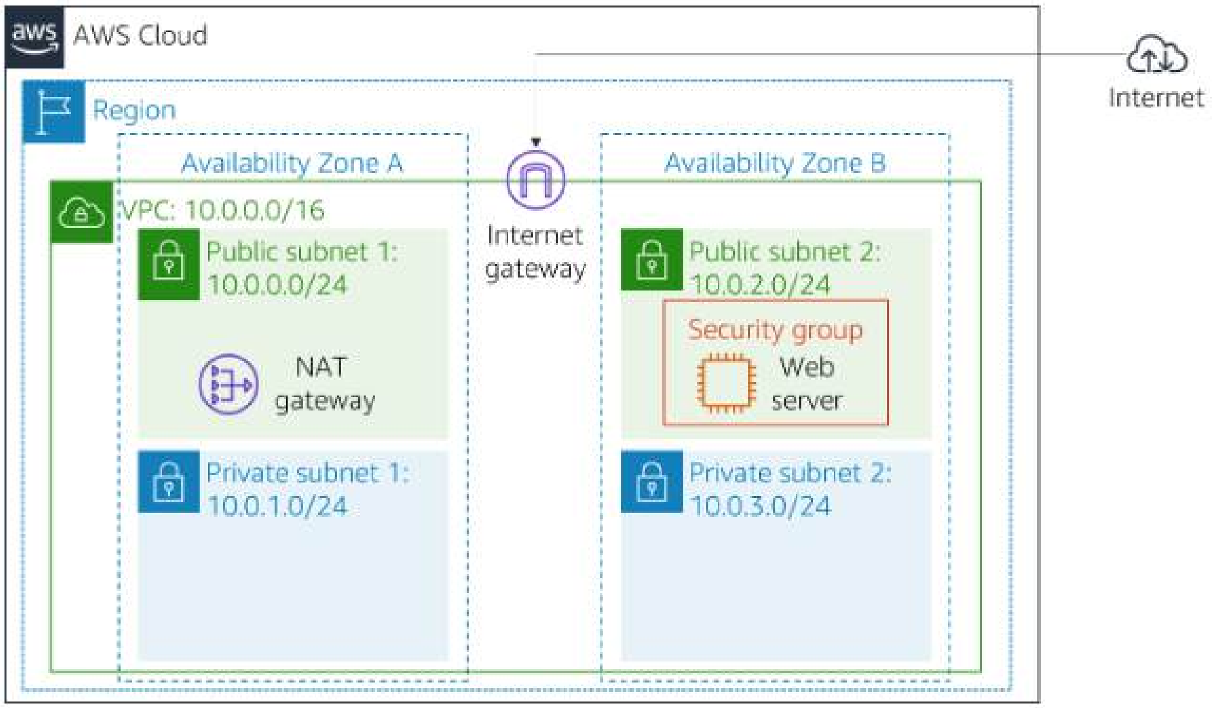
1. Objective

The objective of this lab is to understand how to deploy and manage a relational database in the cloud using Amazon Web Services (AWS). In this lab, a highly available database instance is launched using Amazon Relational Database Service (Amazon RDS), and secure communication between a web server and database server is established. The lab demonstrates how to configure security groups, subnet groups, and Multi-AZ deployment to ensure high availability and data durability. It also provides practical experience in connecting a web application running on Amazon EC2 to an RDS database and performing database operations through an application interface.

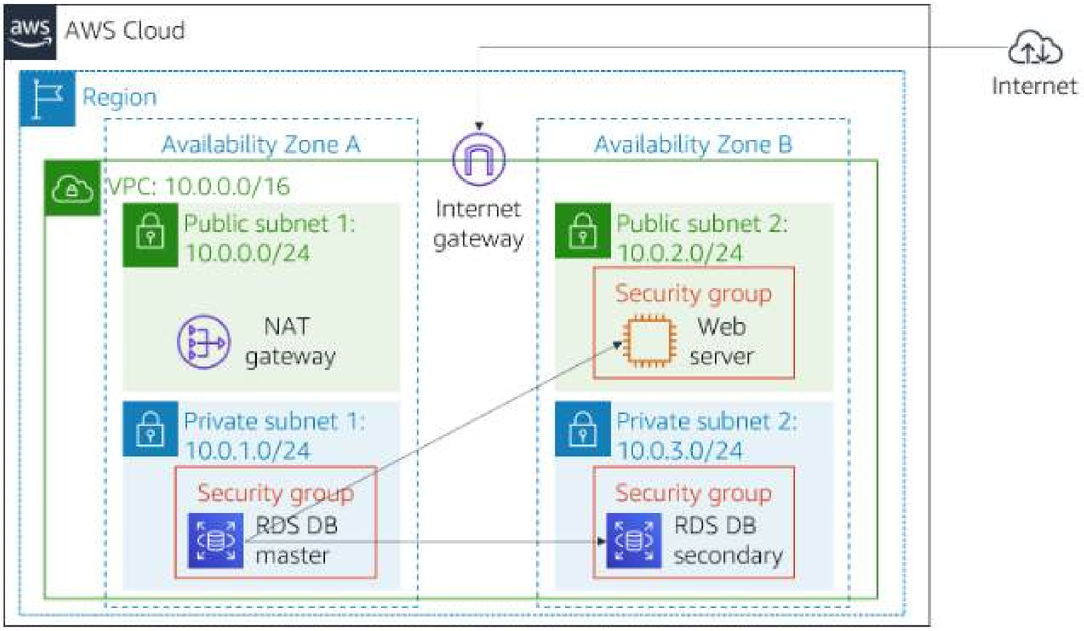
2. Scenario

At the beginning of the lab, a Lab VPC and a web server instance were already provided, but no database was available for storing application data. The task was to create a secure and highly available relational database inside the same VPC and connect it with the web application. To achieve this, a database security group was created to allow controlled access from the web server. A DB subnet group was configured across multiple Availability Zones to support Multi-AZ deployment. Then, a MySQL database instance was launched using Amazon RDS. Finally, the web application was configured with the database endpoint and credentials to perform CRUD operations, verifying successful integration between the application and the database.

When you start the lab, the following infrastructure is provided:



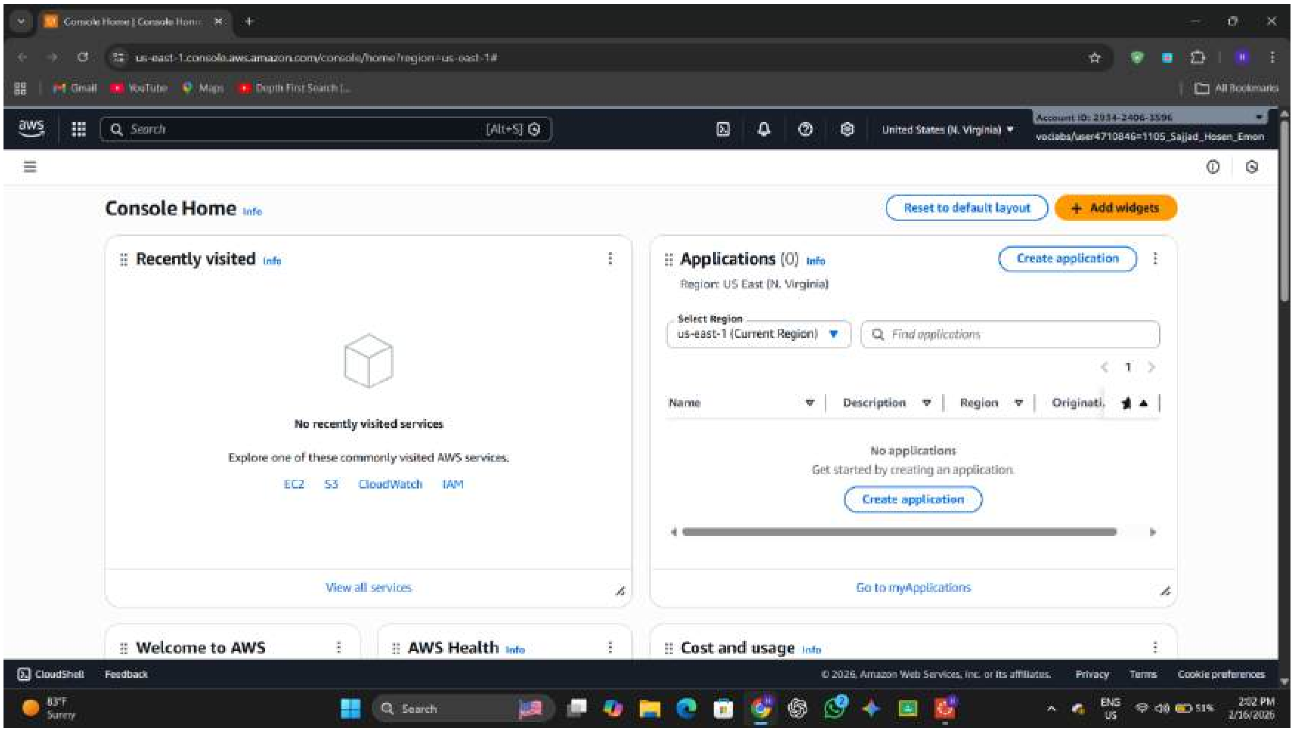
By the end of the lab, you will have this infrastructure:



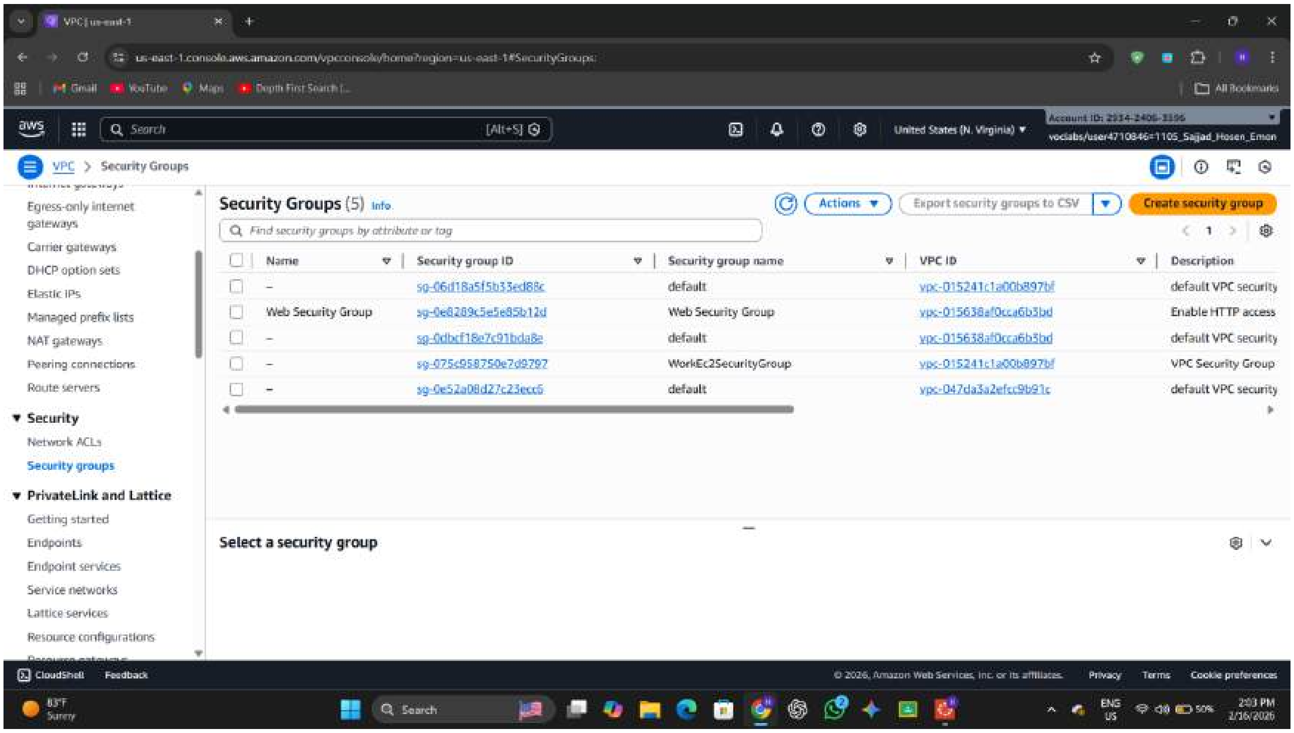
3. Working Procedure

Task 1: Create Security Group

1. Open AWS Console and go to VPC service.



2. Click Security Groups and choose Create Security Group.



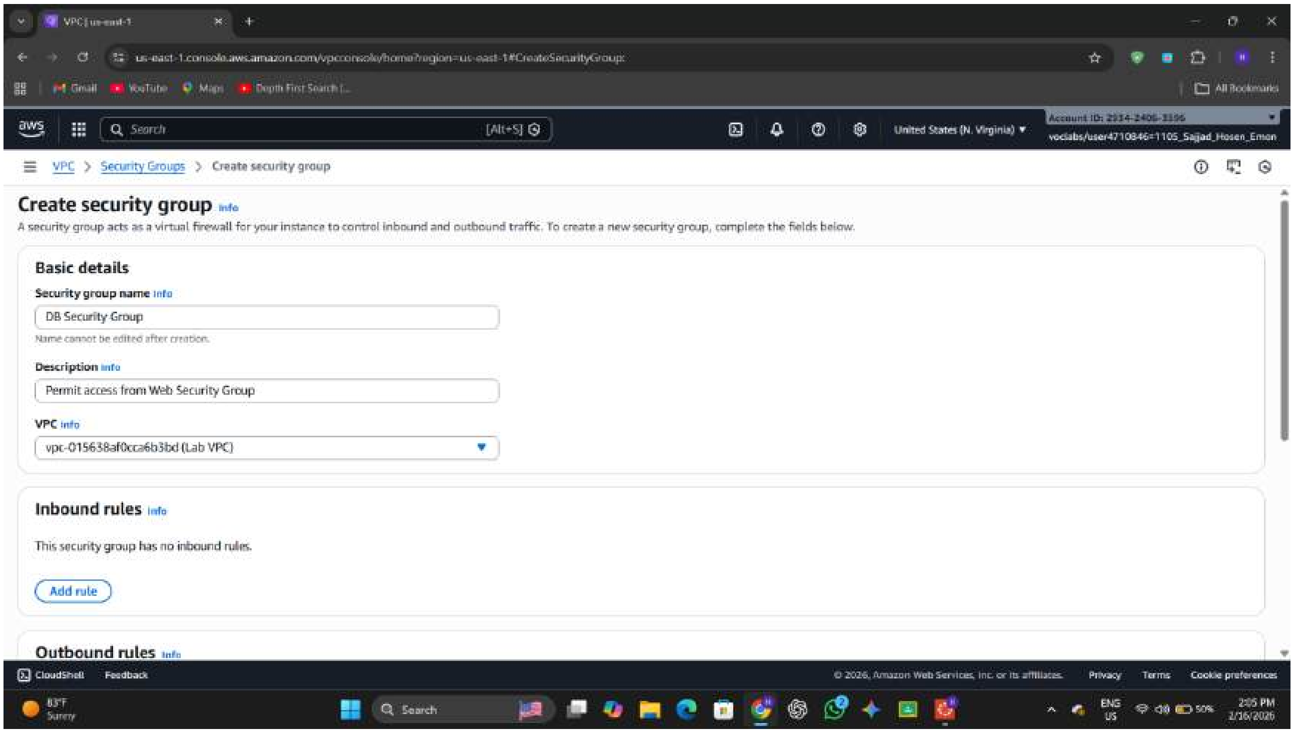
Security Groups (5) Info

Find security groups by attribute or tag

	Name	Security group ID	Security group name	VPC ID	Description
□	–	sg-06d18a5f5b33ed88c	default	vpc-015241c1a00b897bf	default VPC security
□	Web Security Group	sg-0e8289c5e5e85b12d	Web Security Group	vpc-015638af0cca6b3bd	Enable HTTP access
□	–	sg-0dbcf18e7c91bda8e	default	vpc-015638af0cca6b3bd	default VPC security
□	–	sg-075c958750e7d9797	WorkEc2SecurityGroup	vpc-015241c1a00b897bf	VPC Security Group
□	–	sg-0e52a08d27c23ecc6	default	vpc-047da3a2efcc9b91c	default VPC security

Select a security group

3. Enter DB Security Group as name and select Lab VPC.



Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name Info: DB Security Group

Name cannot be edited after creation.

Description Info: Permit access from Web Security Group

VPC Info: vpc-015638af0cca6b3bd (Lab VPC)

Inbound rules Info

This security group has no inbound rules.

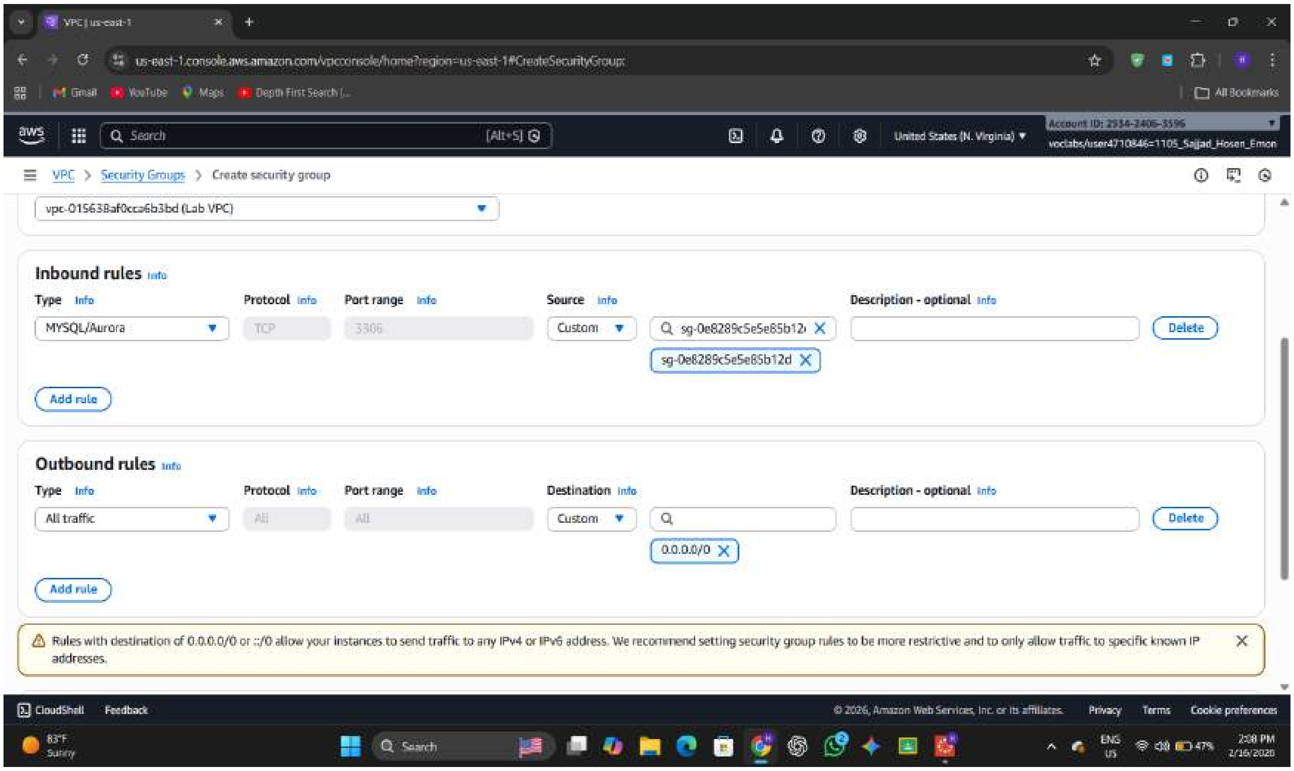
Add rule

Outbound rules Info

4. Add inbound rule for MySQL/Aurora (Port 3306).

5. Select Web Security Group as the source.

6. Click Create Security Group.


VPC | us-east-1
us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateSecurityGroup:
Search [Alt+S]
United States (N. Virginia)
Account ID: 2934-2406-3596
voclabs/user4710846=1105_Sajjad_Hosen_Emon
VPC > Security Groups > Create security group
CloudShell
Feedback
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Privacy
Terms
Cookie preferences
83°F Sunny
2:08 PM 2/16/2026

vpc-015638af0cca6b3bd (Lab VPC)

Inbound rules Info

Type	Protocol	Port range	Source		Description - optional
MYSQL/Aurora	TCP	3306	Custom	sg-0e8289c5e5e85b12d	

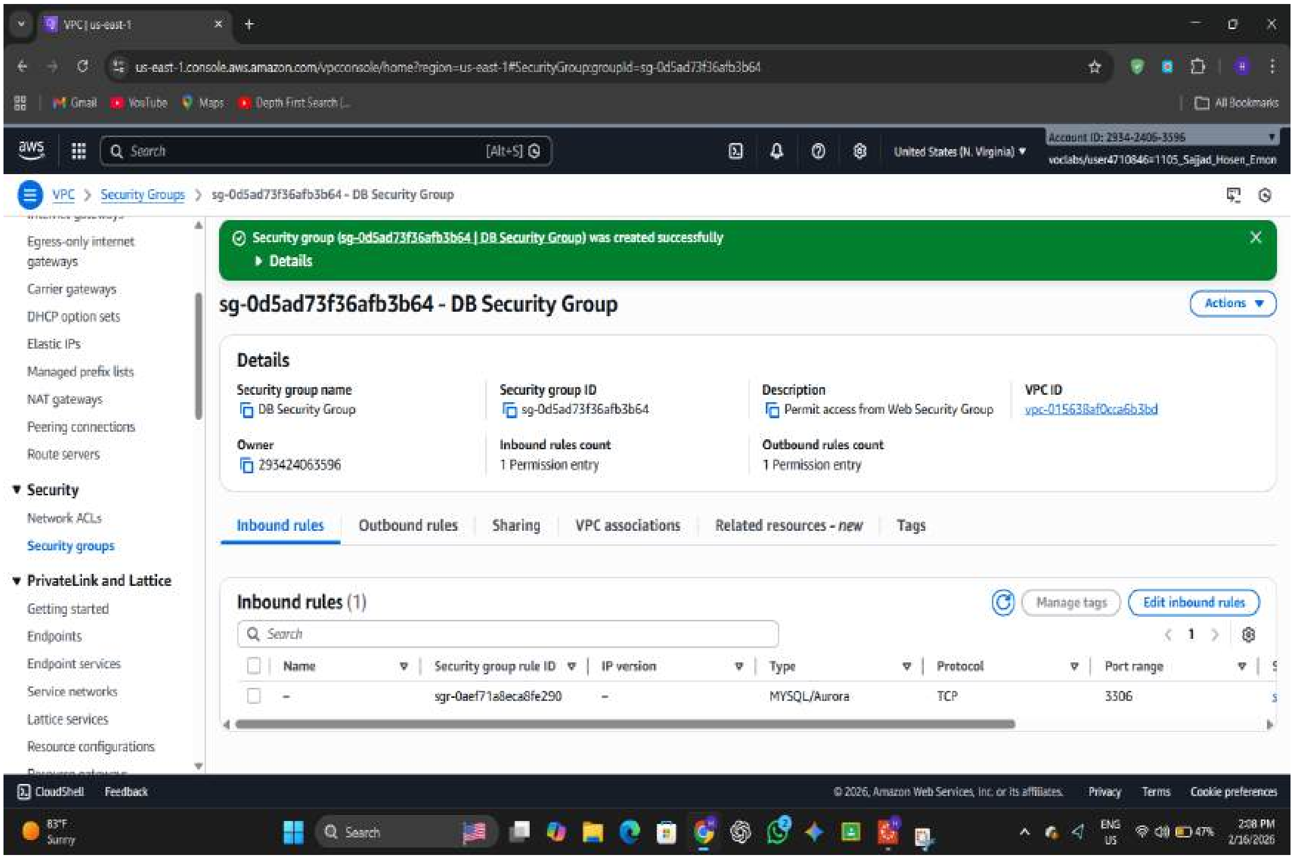
Add rule

Outbound rules Info

Type	Protocol	Port range	Destination		Description - optional
All traffic	All	All	Custom	0.0.0.0/0	

Add rule

Rules with destination of 0.0.0.0/0 or ::/0 allow your instances to send traffic to any IPv4 or IPv6 address. We recommend setting security group rules to be more restrictive and to only allow traffic to specific known IP addresses.



Security group (sg-0d5ad73f36afb3b64 | DB Security Group) was created successfully

Details

sg-0d5ad73f36afb3b64 - DB Security Group

Details

Security group name: DB Security Group

Security group ID: sg-0d5ad73f36afb3b64

Description: Permit access from Web Security Group

VPC ID: vpc-015638af0cca6b3bd

Owner: 293424063596

Inbound rules count: 1 Permission entry

Outbound rules count: 1 Permission entry

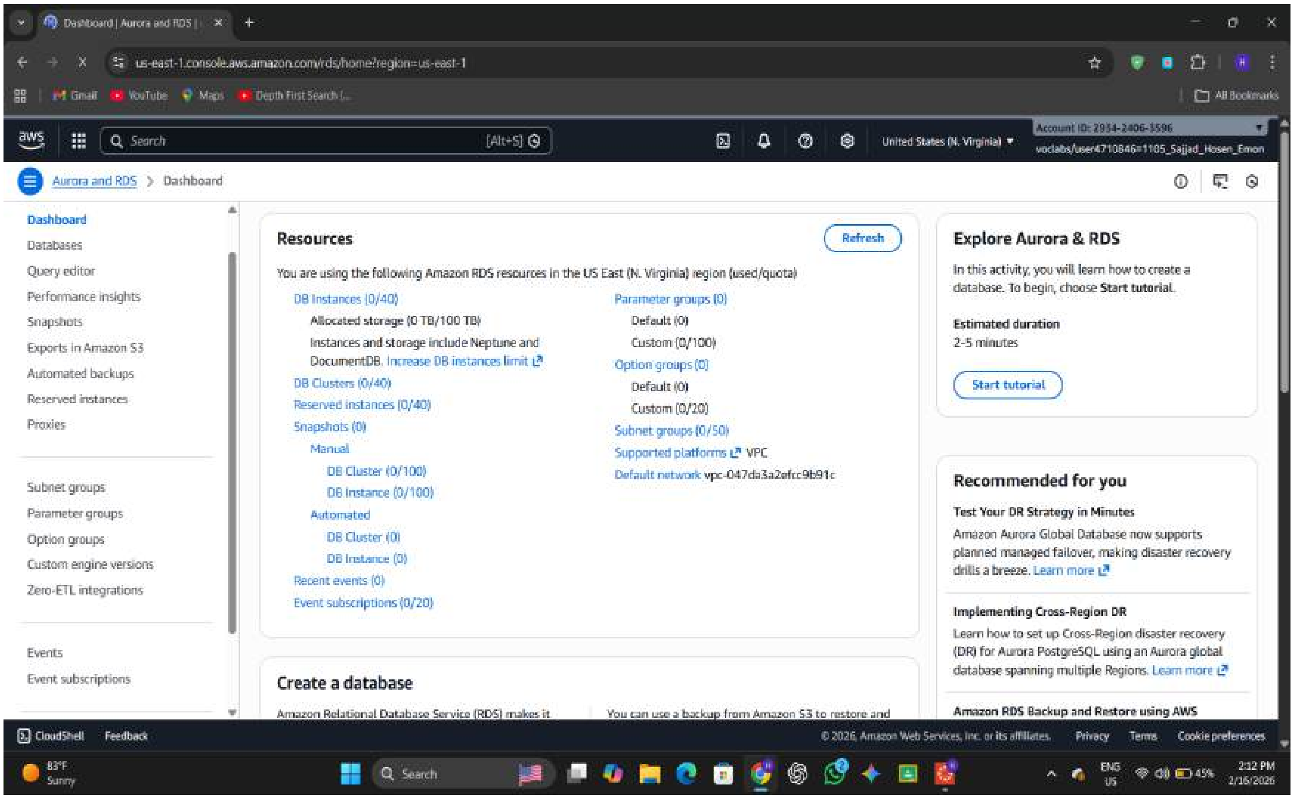
Inbound rules | Outbound rules | Sharing | VPC associations | Related resources - new | Tags

Inbound rules (1)

Name	Security group rule ID	IP version	Type	Protocol	Port range
–	sgr-0aef71a8eca8fe290	–	MYSQL/Aurora	TCP	3306

Task 2: Create DB Subnet Group

1. Open RDS service from AWS Console.



Resources

You are using the following Amazon RDS resources in the US East (N. Virginia) region (used/quota)

DB Instances (0/40)
Allocated storage (0 TB/100 TB)
Instances and storage include Neptune and DocumentDB. Increase DB instances limit
DB Clusters (0/40)
Reserved instances (0/40)
Snapshots (0)
Manual
DB Cluster (0/100)
DB Instance (0/100)
Automated
DB Cluster (0)
DB Instance (0)
Recent events (0)
Event subscriptions (0/20)

Parameter groups (0)
Default (0)
Custom (0/100)
Option groups (0)
Default (0)
Custom (0/20)
Subnet groups (0/50)
Supported platforms VPC
Default network vpc-047da3a2efcc9b91c

Create a database

Amazon Relational Database Service (RDS) makes it

You can use a backup from Amazon S3 to restore and

Explore Aurora & RDS

In this activity, you will learn how to create a database. To begin, choose **Start tutorial**.

Estimated duration
2-5 minutes

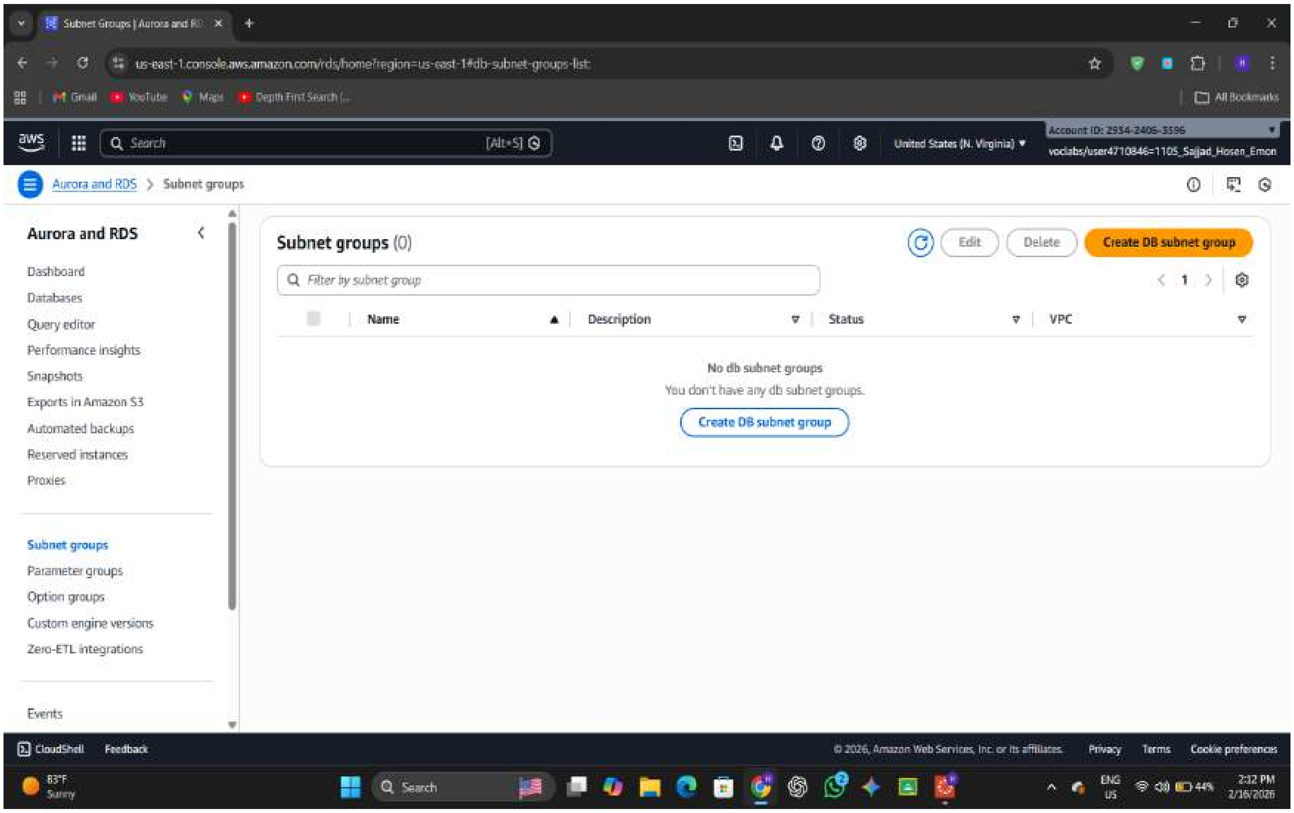
Recommended for you

Test Your DR Strategy in Minutes
Amazon Aurora Global Database now supports planned managed failover, making disaster recovery drills a breeze. Learn more

Implementing Cross-Region DR
Learn how to set up Cross-Region disaster recovery (DR) for Aurora PostgreSQL using an Aurora global database spanning multiple Regions. Learn more

Amazon RDS Backup and Restore using AWS

2. Click Subnet Groups and choose Create DB Subnet Group.

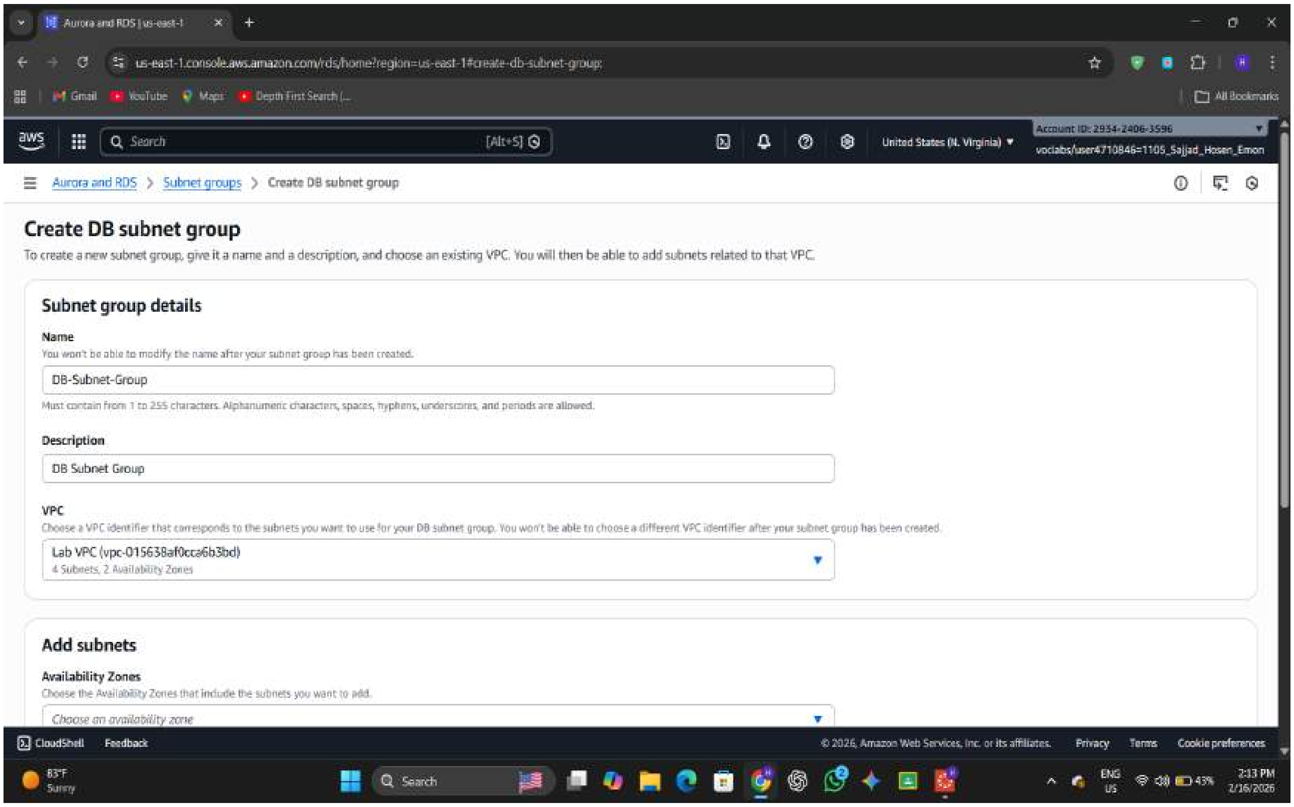


Subnet groups (0)

Name	Description	Status	VPC

No db subnet groups
You don't have any db subnet groups.

3. Enter DB-Subnet-Group as name and select Lab VPC.



us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#create-db-subnet-group:

Account ID: 2934-2406-3596
voclabs/user4710846=1105_Sajjad_Hosen_Emon

Aurora and RDS > Subnet groups > Create DB subnet group

Create DB subnet group

To create a new subnet group, give it a name and a description, and choose an existing VPC. You will then be able to add subnets related to that VPC.

Subnet group details

Name
You won't be able to modify the name after your subnet group has been created.
DB-Subnet-Group
Must contain from 1 to 255 characters. Alphanumeric characters, spaces, hyphens, underscores, and periods are allowed.

Description
DB Subnet Group

VPC
Choose a VPC identifier that corresponds to the subnets you want to use for your DB subnet group. You won't be able to choose a different VPC identifier after your subnet group has been created.
Lab VPC (vpc-015638af0cca6b3bd)
4 Subnets, 2 Availability Zones

Add subnets

Availability Zones
Choose the Availability Zones that include the subnets you want to add.
Choose an availability zone

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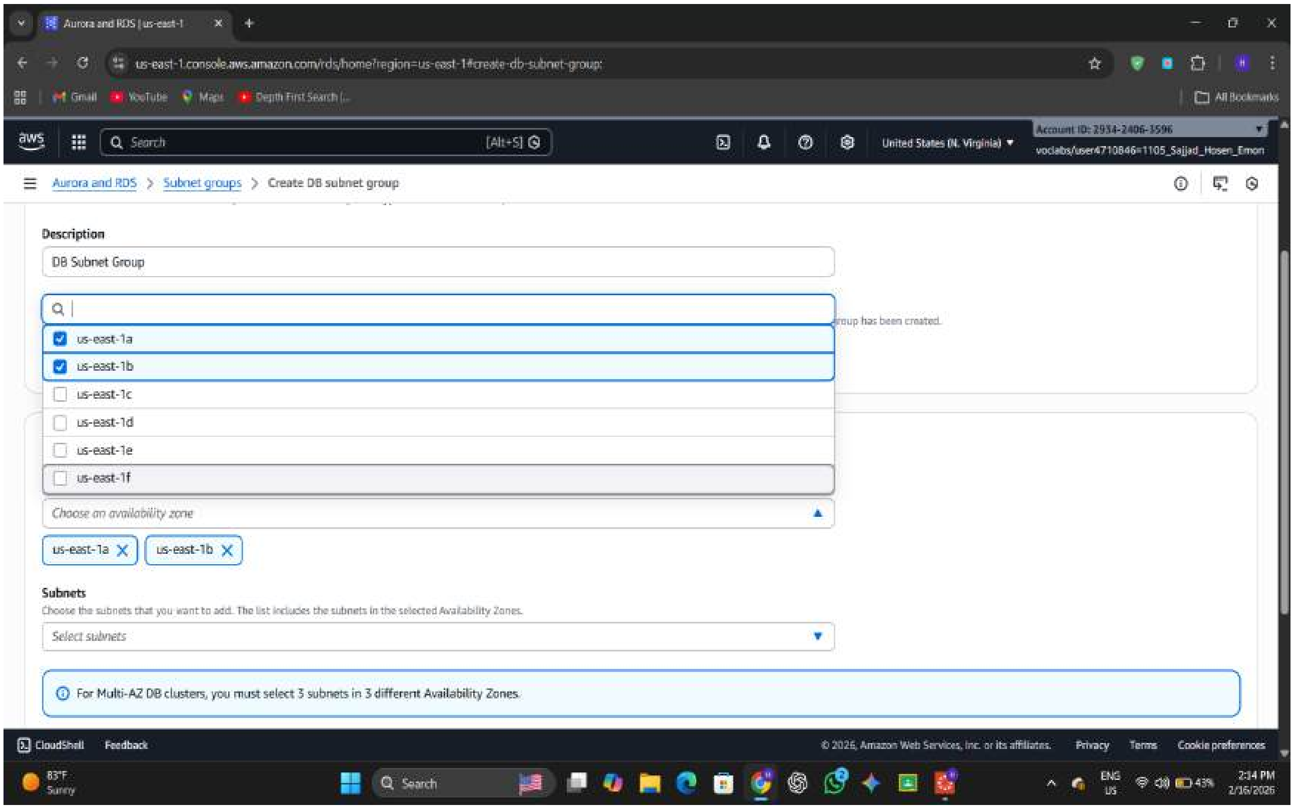
4. Select Availability Zones us-east-1a and us-east-1b.



Aurora and RDS > Subnet groups > Create DB subnet group

Description
DB Subnet Group

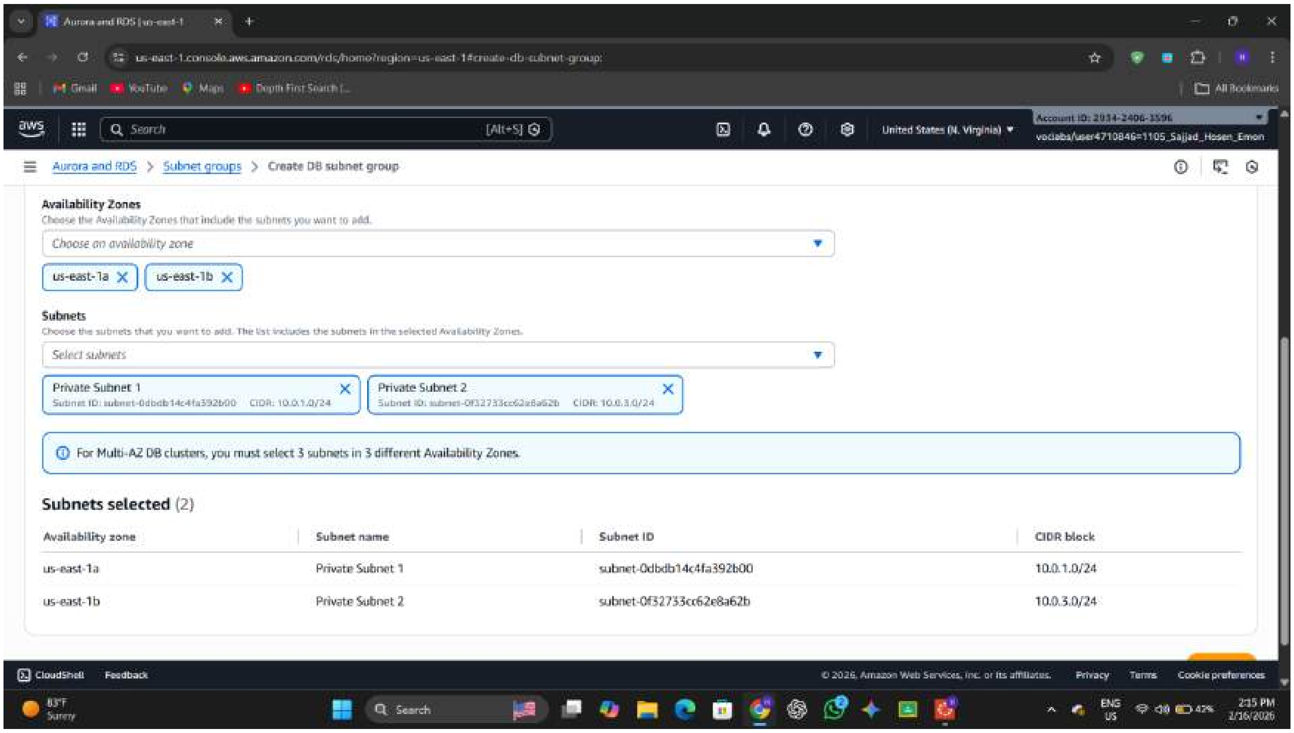
☑ us-east-1a
☑ us-east-1b
□ us-east-1c
□ us-east-1d
□ us-east-1e
□ us-east-1f

Choose an availability zone
us-east-1a ✕ us-east-1b ✕

Subnets
Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.
Select subnets

For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.

5. Add subnets 10.0.1.0/24 and 10.0.3.0/24.


Aurora and RDS | us-east-1
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#create-db-subnet-group:
Aurora and RDS > Subnet groups > Create DB subnet group
United States (N. Virginia)
Account ID: 2934-2406-3596
voclabs/user4710846=1105_Sajjad_Hosen_Emon

Availability Zones

Choose the Availability Zones that include the subnets you want to add.

Choose an availability zone

us-east-1a ✕ us-east-1b ✕

Subnets

Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.

Select subnets

Private Subnet 1 ✕ Subnet ID: subnet-0dbdb14c4fa392b00 CIDR: 10.0.1.0/24

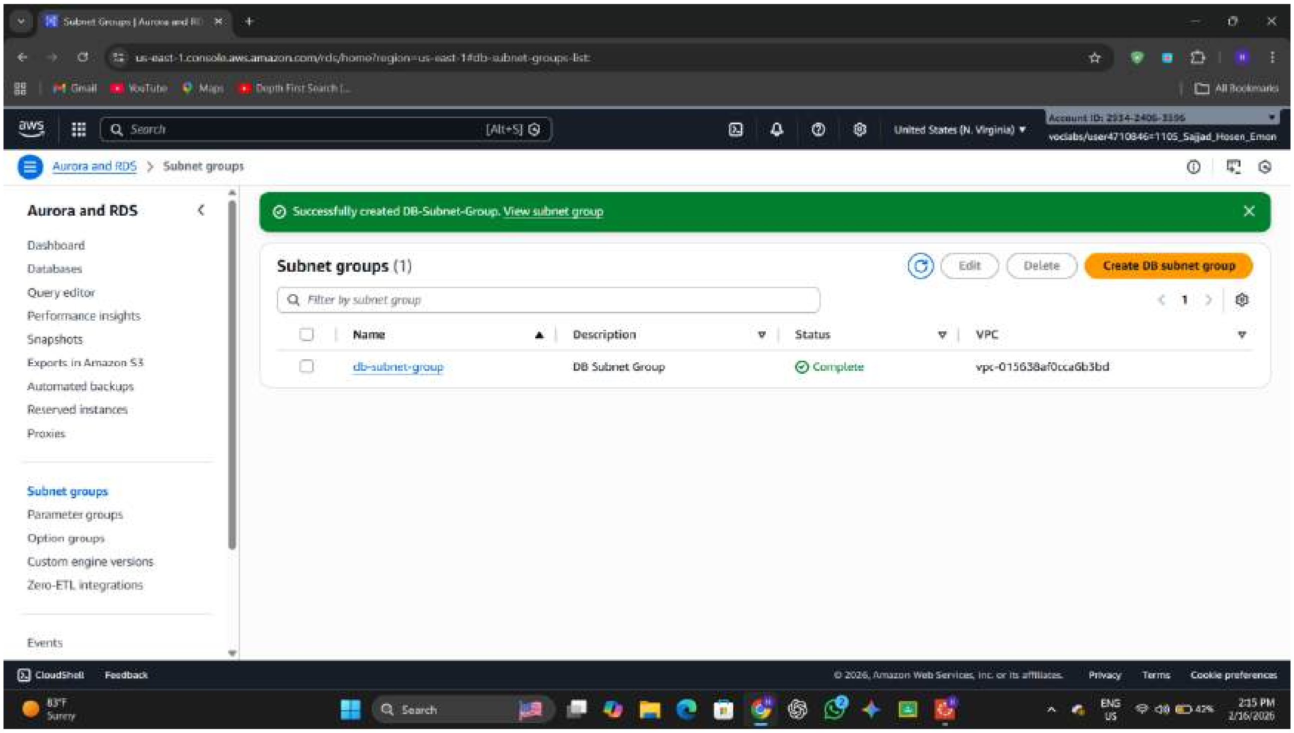
Private Subnet 2 ✕ Subnet ID: subnet-0f32733cc62e8a62b CIDR: 10.0.3.0/24

ⓘ For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.

Subnets selected (2)

Availability zone	Subnet name	Subnet ID	CIDR block
us-east-1a	Private Subnet 1	subnet-0dbdb14c4fa392b00	10.0.1.0/24
us-east-1b	Private Subnet 2	subnet-0f32733cc62e8a62b	10.0.3.0/24

6. Click Create.



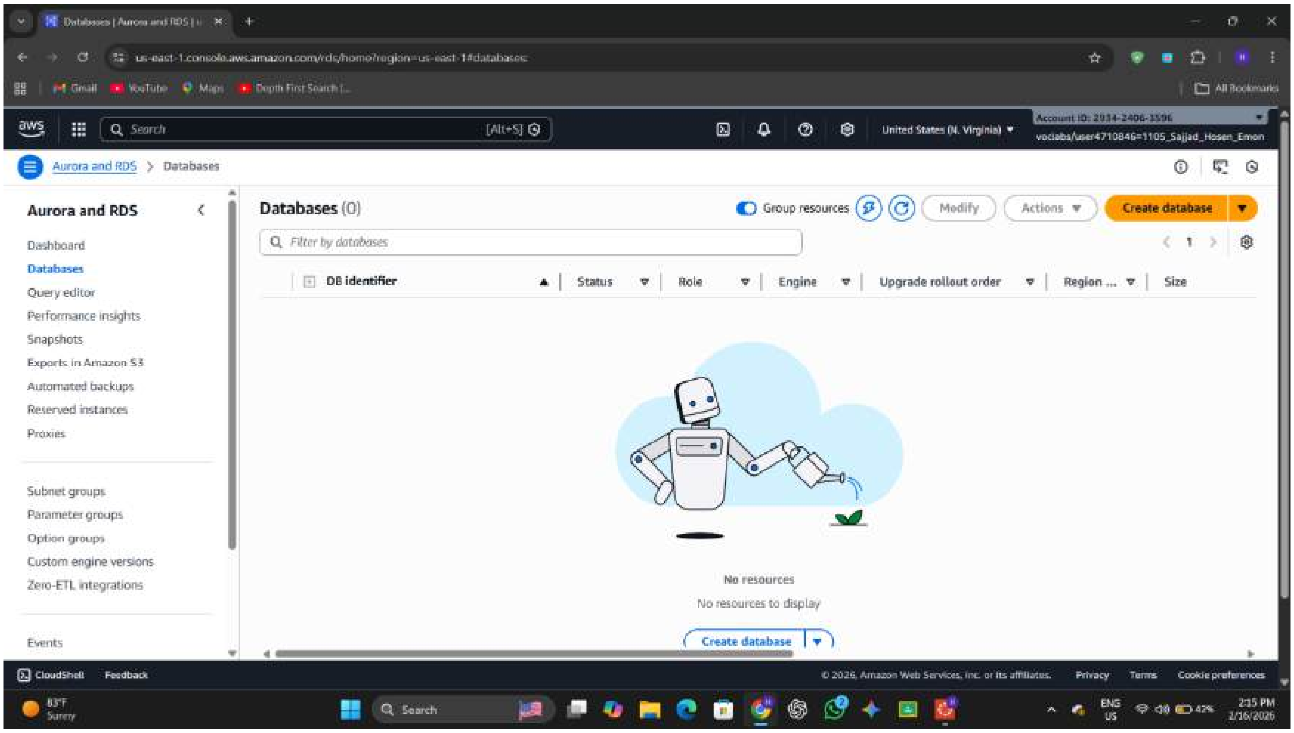
Successfully created DB-Subnet-Group. View subnet group

Subnet groups (1)

Name	Description	Status	VPC
db-subnet-group	DB Subnet Group	Complete	vpc-015638af0cca6b3bd

Task 3: Create RDS DB Instance

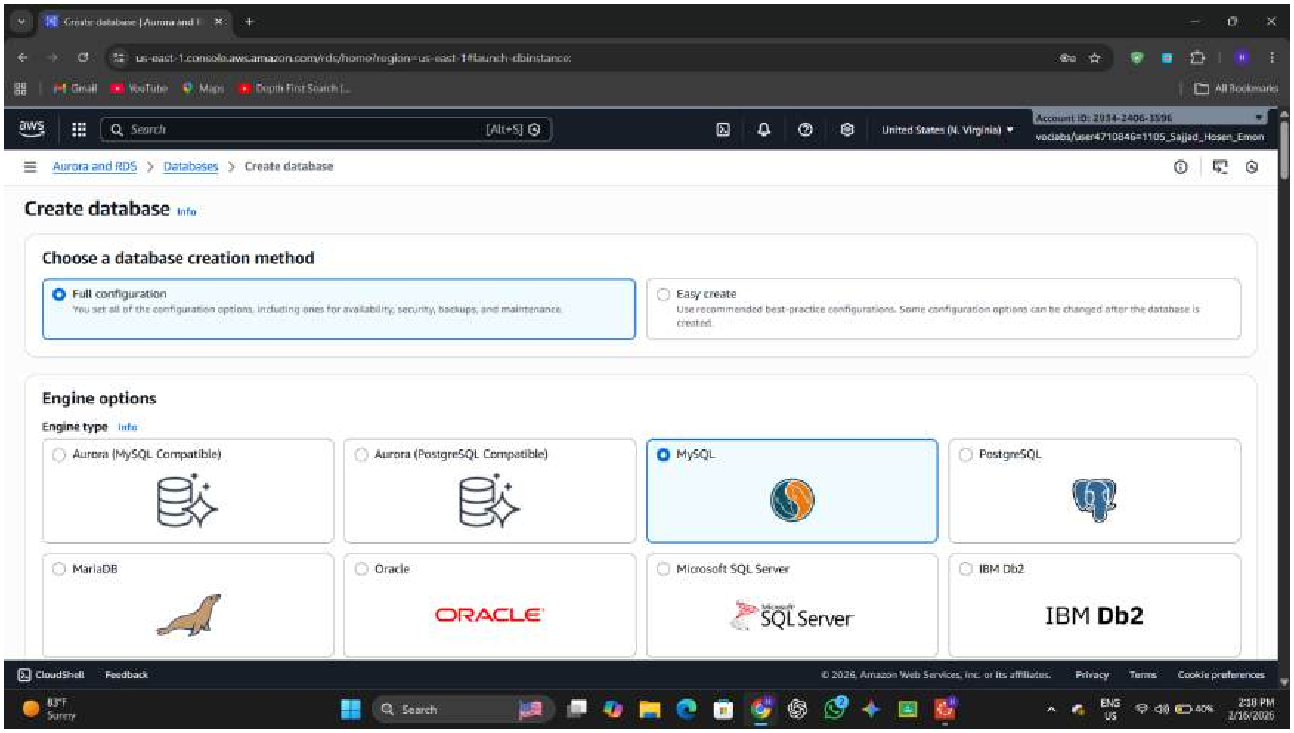
1. Go to Databases in RDS and click Create Database.



No resources

No resources to display

2. Select MySQL engine and choose Dev/Test template.


Create database | Aurora and R...
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:
Gmail
YouTube
Maps
Depth First Search (...
All Bookmarks
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2934-2406-3596
voclabs/user4710846=1105_Sajjad_Hosen_Emon
Aurora and RDS
Databases
Create database
Info
ORACLE
SQL Server
IBM Db2
CloudShell
Feedback
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Privacy
Terms
Cookie preferences
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Sunny
Search
2:18 PM
2/16/2026

Create database

Choose a database creation method

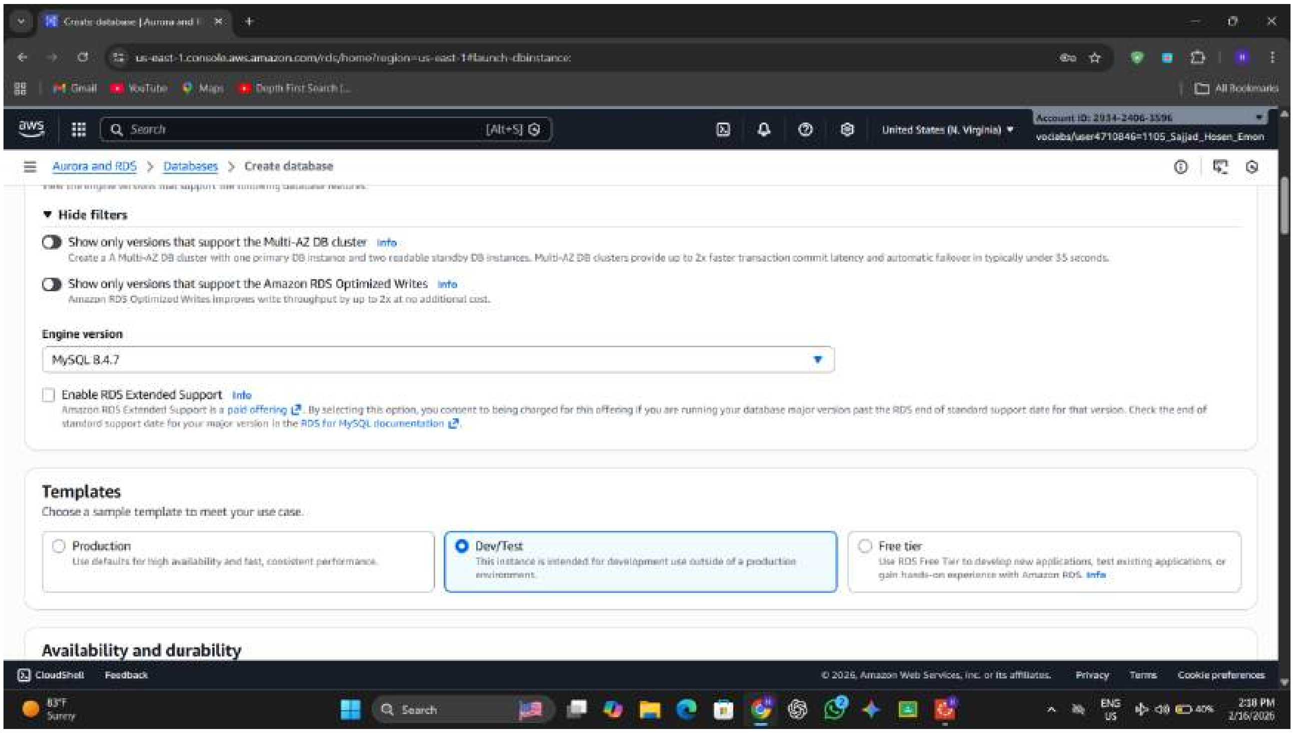
● Full configuration
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

○ Easy create
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type

○ Aurora (MySQL Compatible)
○ Aurora (PostgreSQL Compatible)
● MySQL
○ PostgreSQL
○ MariaDB
○ Oracle
○ Microsoft SQL Server
○ IBM Db2



Create database | Aurora and R
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:
Gmail
YouTube
Maps
Depth First Search (...
All Bookmarks
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2934-2406-3596
voclabs/user4710846=1105_Sajjad_Hosen_Emon
CloudShell
Feedback
© 2026, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences
83°F
Sunny
Search
ENG
US
40%
2:18 PM
2/16/2026

Aurora and RDS > Databases > Create database

▼ Hide filters

○ Show only versions that support the Multi-AZ DB cluster Info
Create a A Multi-AZ DB cluster with one primary DB instance and two readable standby DB instances. Multi-AZ DB clusters provide up to 2x faster transaction commit latency and automatic failover in typically under 35 seconds.

○ Show only versions that support the Amazon RDS Optimized Writes Info
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine version
MySQL 8.4.7

□ Enable RDS Extended Support Info
Amazon RDS Extended Support is a paid offering. By selecting this option, you consent to being charged for this offering if you are running your database major version past the RDS end of standard support date for that version. Check the end of standard support date for your major version in the RDS for MySQL documentation.

Templates
Choose a sample template to meet your use case.

○ Production
Use defaults for high availability and fast, consistent performance.

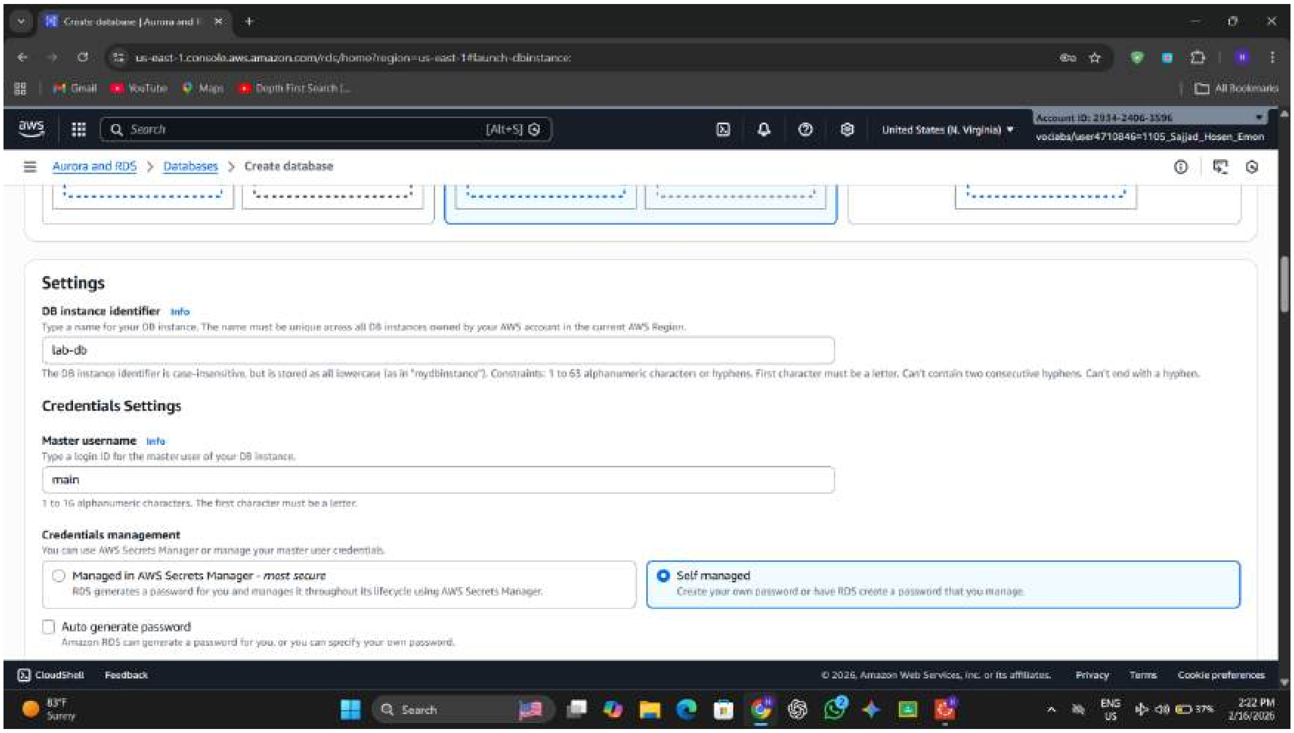
● Dev/Test
This instance is intended for development use outside of a production environment.

○ Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. Info

Availability and durability

3. Enable Multi-AZ deployment option.

4. Set DB identifier as lab-db.



Create database | Aurora and R
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:
Gmail
YouTube
Maps
Depth First Search (...
All Bookmarks
Search
[Alt+S]
United States (N. Virginia)
Account ID: 2934-2406-3596
voclabs/user4710846=1105_Sajjad_Hosen_Emon
CloudShell
Feedback
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Privacy
Terms
Cookie preferences
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Search
ENG
US
37%
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2/16/2026

Aurora and RDS > Databases > Create database

Settings

DB instance identifier Info
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.
lab-db
The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 63 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Credentials Settings

Master username Info
Type a login ID for the master user of your DB instance.
main
1 to 16 alphanumeric characters. The first character must be a letter.

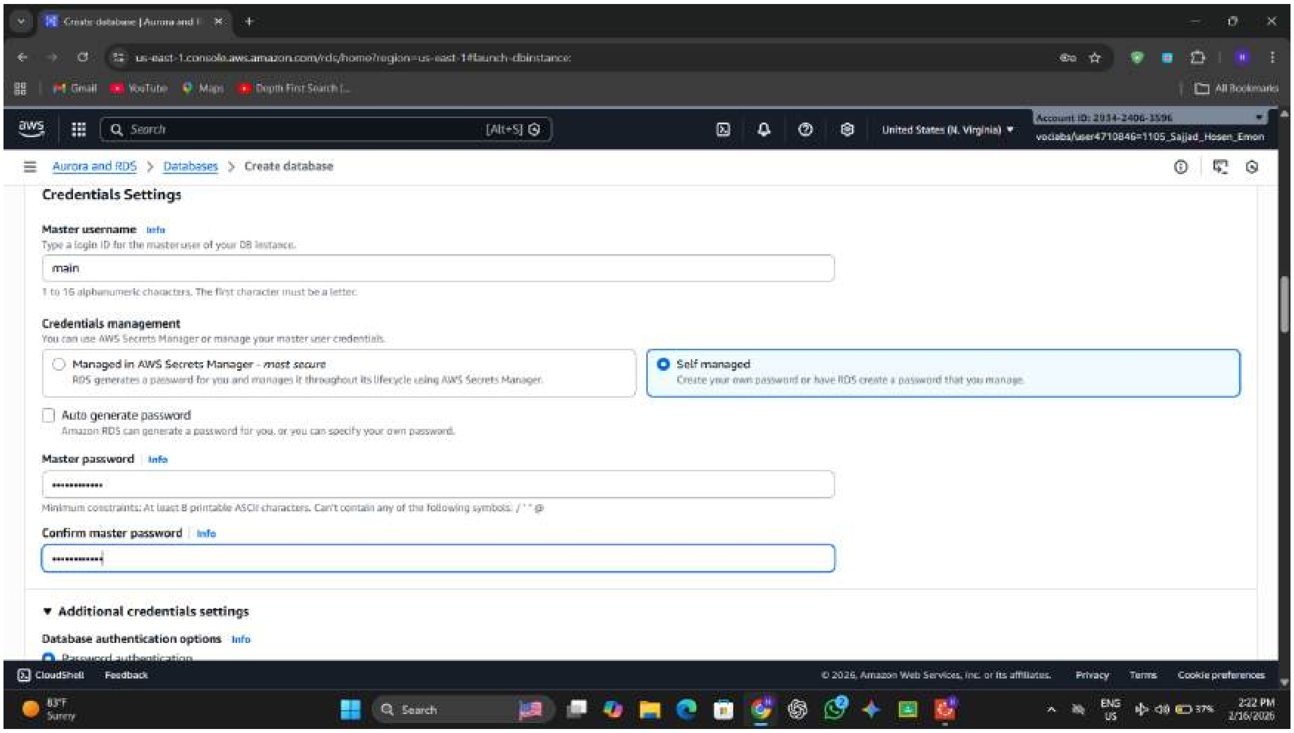
Credentials management
You can use AWS Secrets Manager or manage your master user credentials.

○ Managed in AWS Secrets Manager - *most secure*
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.

● Self managed
Create your own password or have RDS create a password that you manage.

□ Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.

5. Enter username main and password lab-password.



Aurora and RDS > Databases > Create database

Credentials Settings

Master username Info
Type a login ID for the master user of your DB instance.

main

1 to 16 alphanumeric characters. The first character must be a letter.

Credentials management
You can use AWS Secrets Manager or manage your master user credentials.

○ Managed in AWS Secrets Manager - *most secure*
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.

● Self managed
Create your own password or have RDS create a password that you manage.

□ Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.

Master password Info

••••••••••••

Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ' " @

Confirm master password Info

••••••••••••

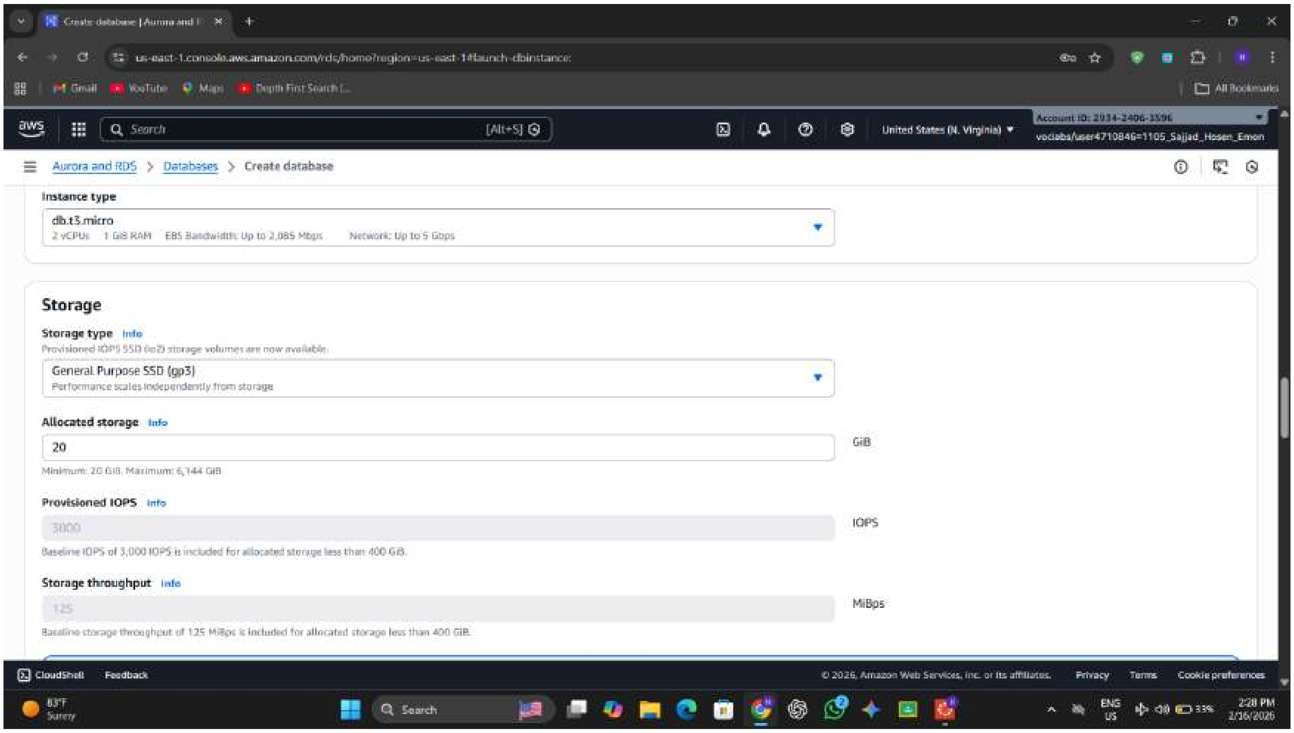
▼ **Additional credentials settings**

Database authentication options Info

● Password authentication

6. Choose db.t3.micro instance class.

7. Set storage type as General Purpose SSD (20 GB).



Aurora and RDS > Databases > Create database

Instance type

db.t3.micro
2 vCPUs 1 GiB RAM EBS Bandwidth: Up to 2,085 Mbps Network: Up to 5 Gbps

Storage

Storage type Info
Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp3)
Performance scales independently from storage

Allocated storage Info

20 GiB

Minimum: 20 GiB. Maximum: 6,144 GiB

Provisioned IOPS Info

3000 IOPS

Baseline IOPS of 3,000 IOPS is included for allocated storage less than 400 GiB.

Storage throughput Info

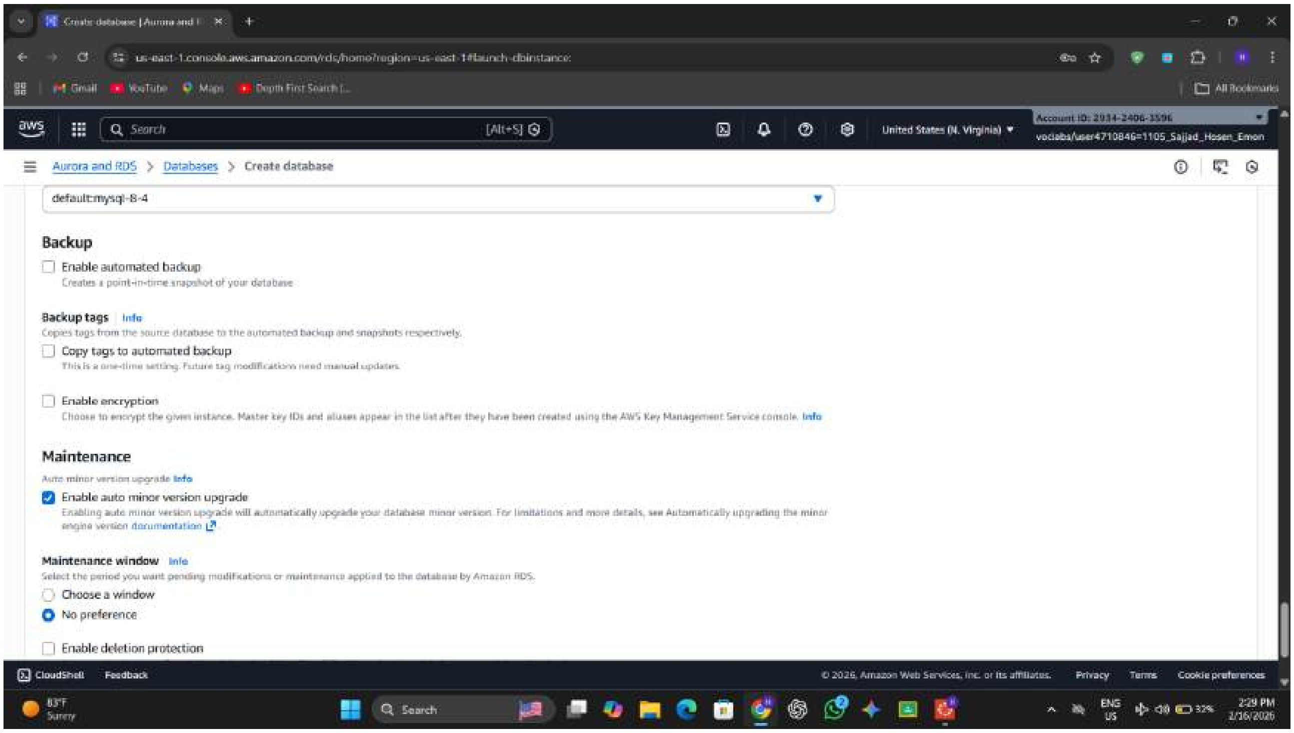
125 MiBps

Baseline storage throughput of 125 MiBps is included for allocated storage less than 400 GiB.

8. Select Lab VPC and attach DB Security Group.

9. Enter initial database name as lab.

10. Disable automatic backups, encryption, and enhanced monitoring.



us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:

Aurora and RDS > Databases > Create database

default:mysql-8-4

Backup

□ Enable automated backup
Creates a point-in-time snapshot of your database

Backup tags Info
Copies tags from the source database to the automated backup and snapshots respectively.

□ Copy tags to automated backup
This is a one-time setting. Future tag modifications need manual updates.

□ Enable encryption
Choose to encrypt the given instance. Master key IDs and aliases appear in the list after they have been created using the AWS Key Management Service console. Info

Maintenance

Auto minor version upgrade Info

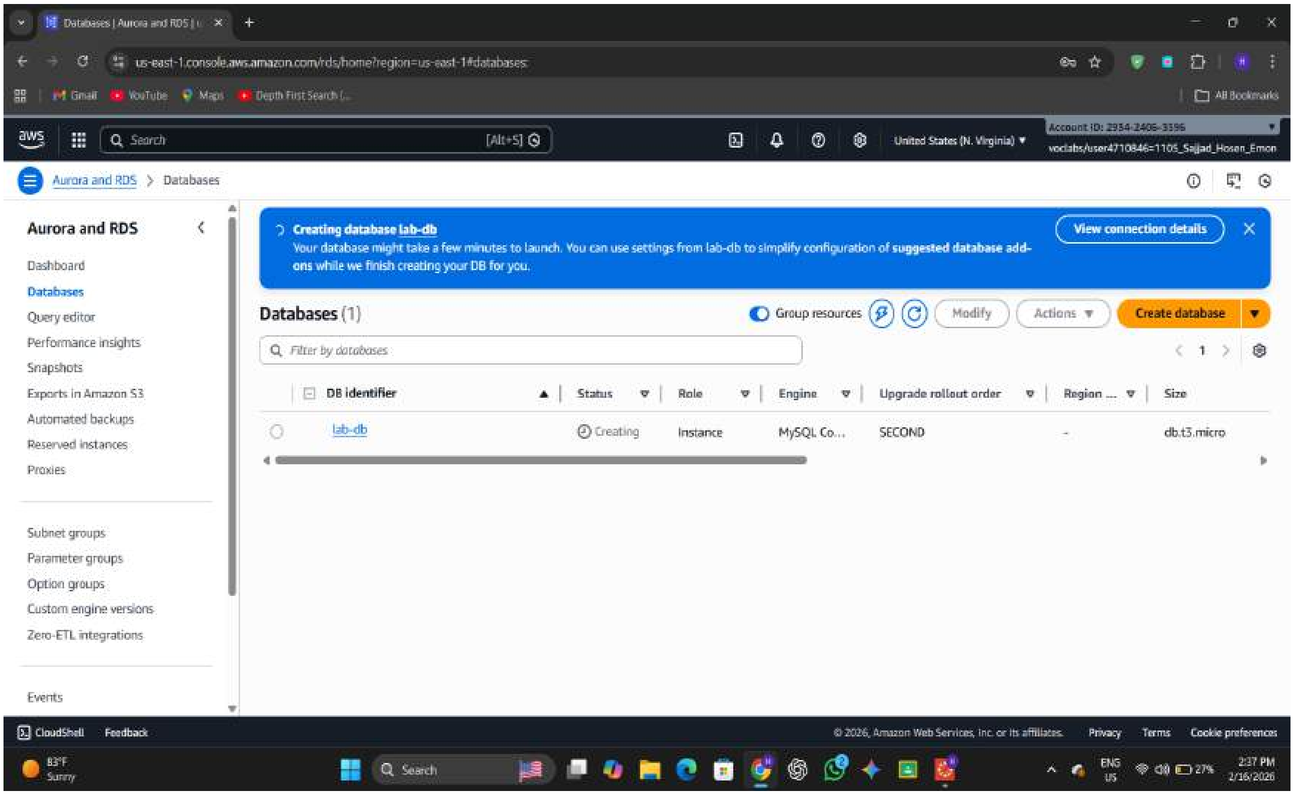
☑ Enable auto minor version upgrade
Enabling auto minor version upgrade will automatically upgrade your database minor version. For limitations and more details, see Automatically upgrading the minor engine version documentation

Maintenance window Info
Select the period you want pending modifications or maintenance applied to the database by Amazon RDS.

○ Choose a window
● No preference

□ Enable deletion protection

11. Click Create Database and wait until status becomes Available.



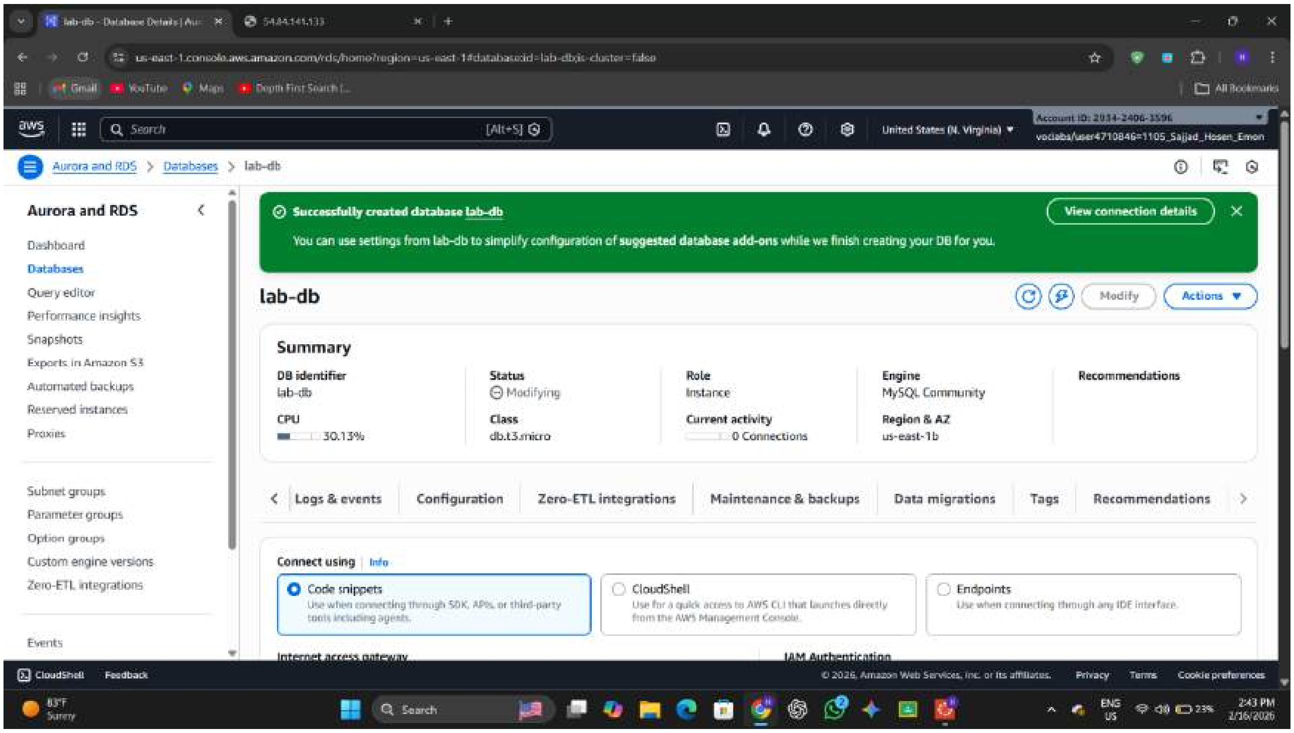
us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases:

Aurora and RDS > Databases

Creating database lab-db
Your database might take a few minutes to launch. You can use settings from lab-db to simplify configuration of **suggested database add-ons** while we finish creating your DB for you.

Databases (1)

DB identifier	Status	Role	Engine	Upgrade rollout order	Region ...	Size
lab-db	Creating	Instance	MySQL Co...	SECOND	-	db.t3.micro



Successfully created database lab-db

You can use settings from lab-db to simplify configuration of suggested database add-ons while we finish creating your DB for you.

lab-db

Summary

DB identifier	Status	Role	Engine	Recommendations
lab-db	Modifying	Instance	MySQL Community	
CPU	Class	Current activity	Region & AZ	
30.13%	db.t3.micro	0 Connections	us-east-1b	

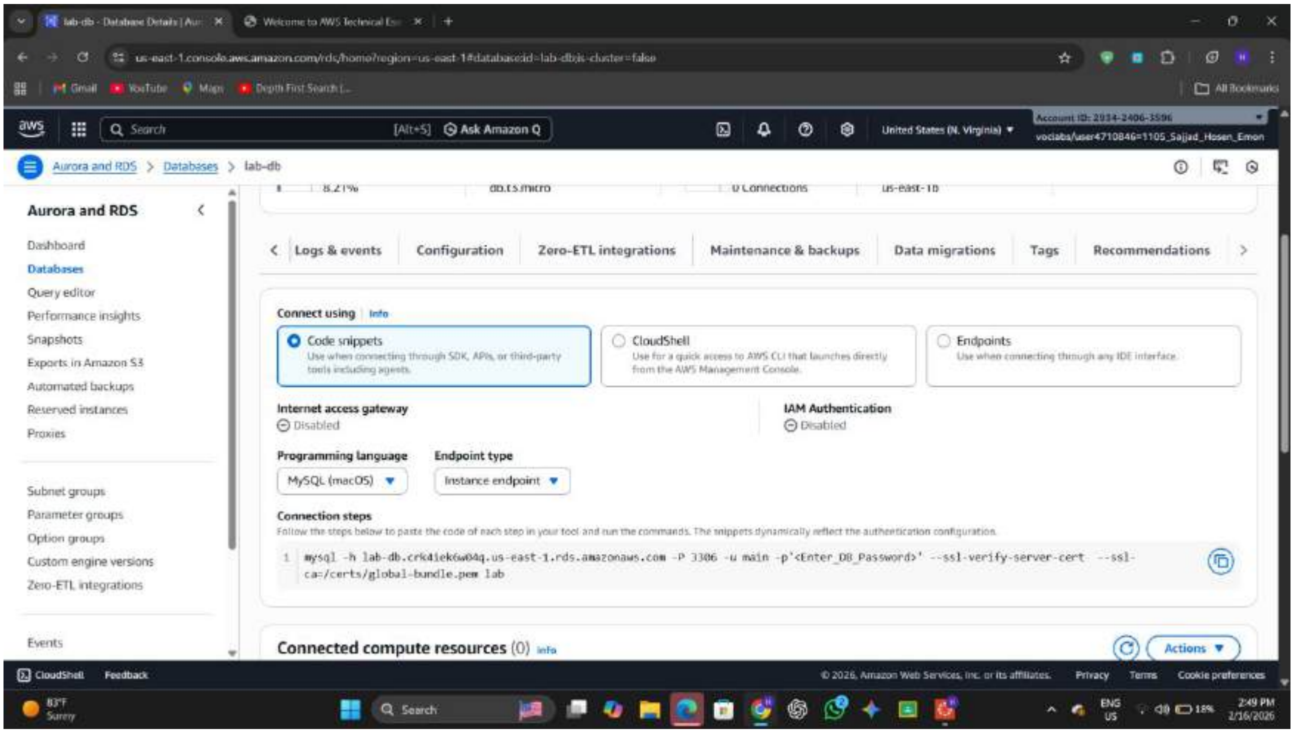
Connect using

● Code snippets — Use when connecting through SDK, APIs, or third-party tools including agents.

○ CloudShell — Use for a quick access to AWS CLI that launches directly from the AWS Management Console.

○ Endpoints — Use when connecting through any IDE interface.

12. Copy the Endpoint from Connectivity & Security section.



Connect using

● Code snippets

○ CloudShell

○ Endpoints

Internet access gateway: Disabled

IAM Authentication: Disabled

Programming language: MySQL (macOS)

Endpoint type: Instance endpoint

Connection steps

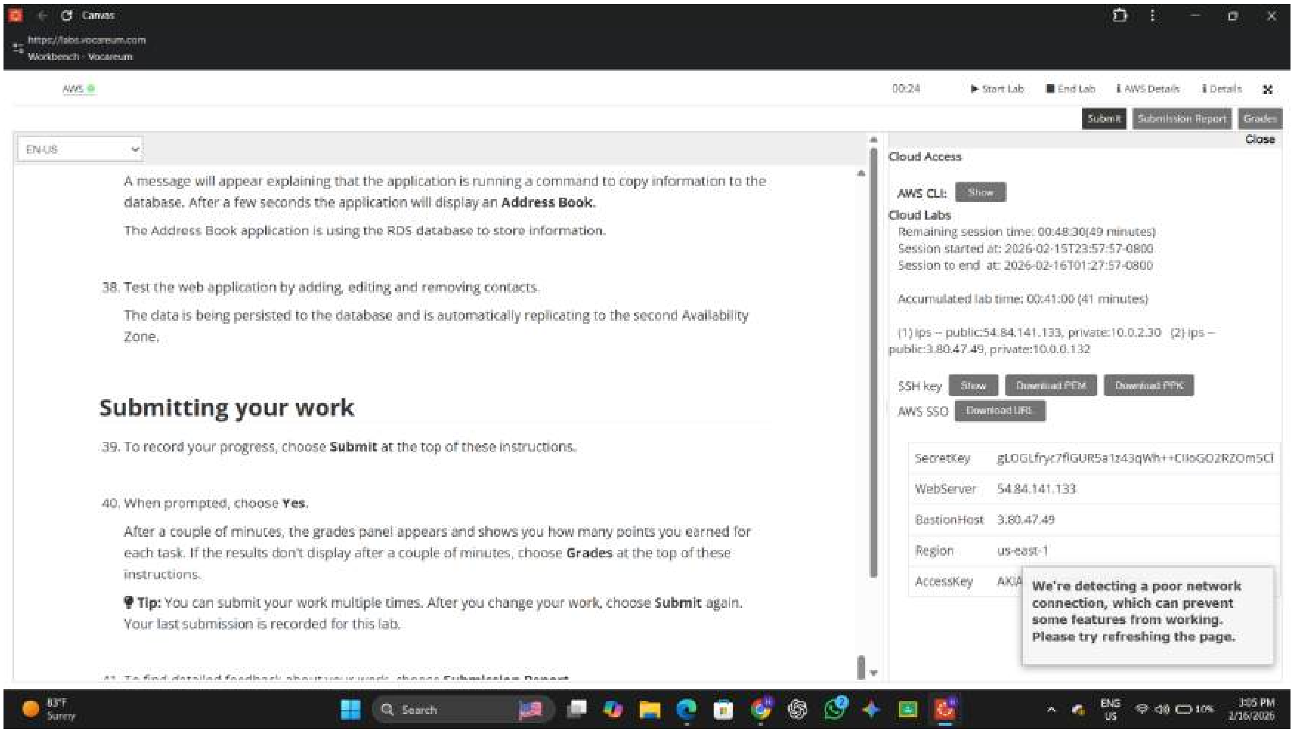
Follow the steps below to paste the code of each step in your tool and run the commands. The snippets dynamically reflect the authentication configuration.

```
mysql -h lab-db.crk4iek6w04q.us-east-1.rds.amazonaws.com -P 3306 -u main -p'<Enter_DB_Password>' --ssl-verify-server-cert  --ssl-ca=/certs/global-bundle.pem lab
```

Connected compute resources (0)

Task 4: Connect Web Application to Database

1. Copy Web Server Public IP from AWS Details.



A message will appear explaining that the application is running a command to copy information to the database. After a few seconds the application will display an **Address Book**.

The Address Book application is using the RDS database to store information.

38. Test the web application by adding, editing and removing contacts.

    The data is being persisted to the database and is automatically replicating to the second Availability Zone.

Submitting your work

39. To record your progress, choose **Submit** at the top of these instructions.

40. When prompted, choose **Yes**.

    After a couple of minutes, the grades panel appears and shows you how many points you earned for each task. If the results don't display after a couple of minutes, choose **Grades** at the top of these instructions.

    Tip: You can submit your work multiple times. After you change your work, choose **Submit** again. Your last submission is recorded for this lab.

41. To find detailed feedback about your work, choose **Submission Report**

Cloud Access

AWS CLI: Show

Cloud Labs

Remaining session time: 00:48:30(49 minutes)
Session started at: 2026-02-15T23:57:57-0800
Session to end at: 2026-02-16T01:27:57-0800

Accumulated lab time: 00:41:00 (41 minutes)

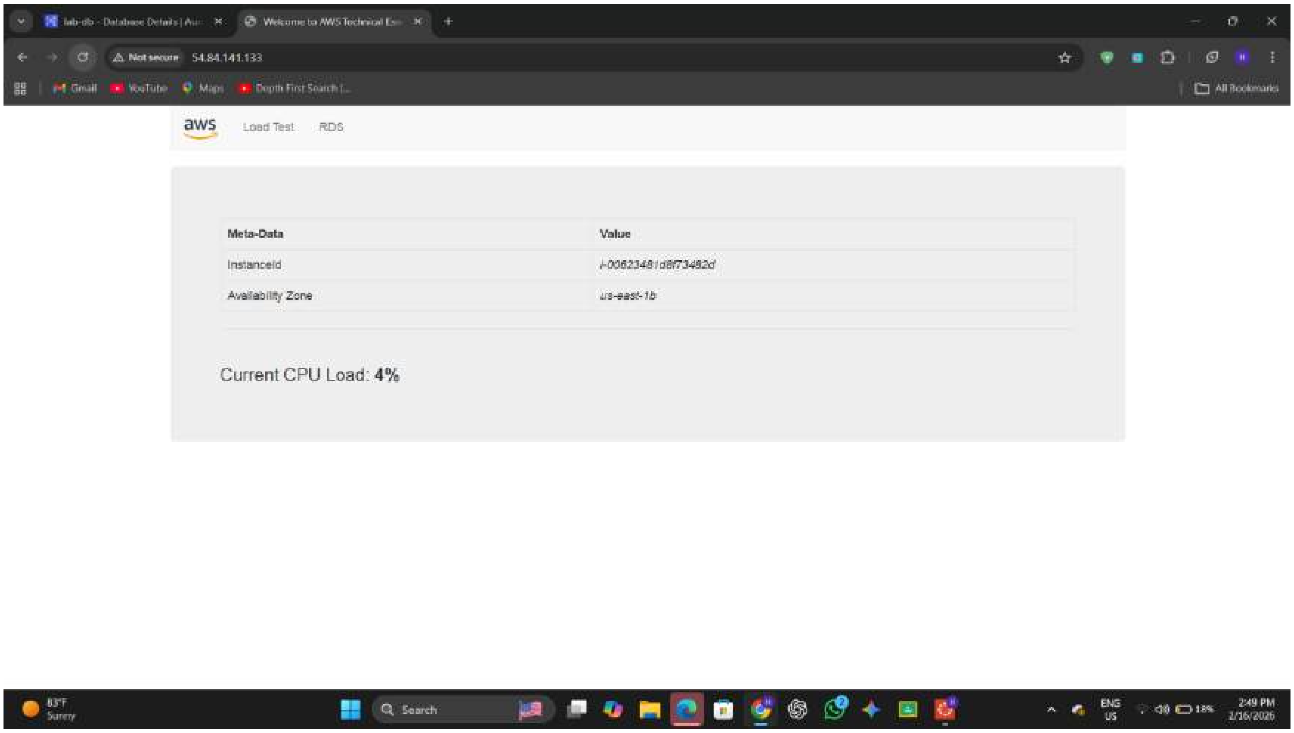
(1) ips -- public:54.84.141.133, private:10.0.2.30 (2) ips -- public:3.80.47.49, private:10.0.0.132

SSH key Show Download PEM Download PPK
AWS SSO Download URL

SecretKey	gLOGLfryc7flGUR5a1z43qWh++CIloGO2RZOm5Cl
WebServer	54.84.141.133
BastionHost	3.80.47.49
Region	us-east-1
AccessKey	AKIA

We're detecting a poor network connection, which can prevent some features from working. Please try refreshing the page.

2. Open the IP address in a web browser.



Meta-Data	Value
InstanceId	i-00623481d8f73482d
Availability Zone	us-east-1b

Current CPU Load: **4%**

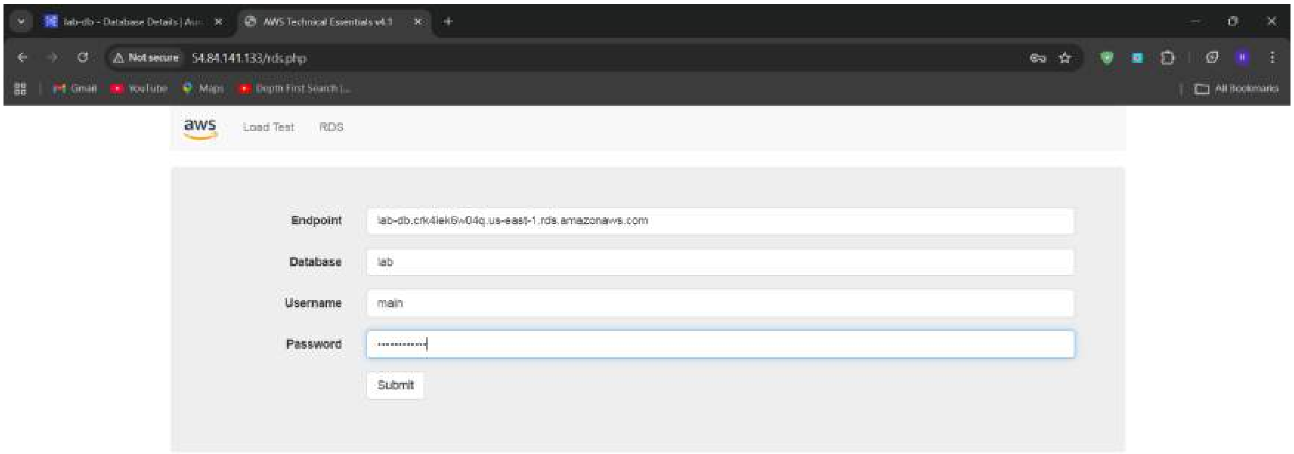
3. Click the RDS link on the application page.

4. Enter the RDS Endpoint in Endpoint field.

5. Enter database name lab.

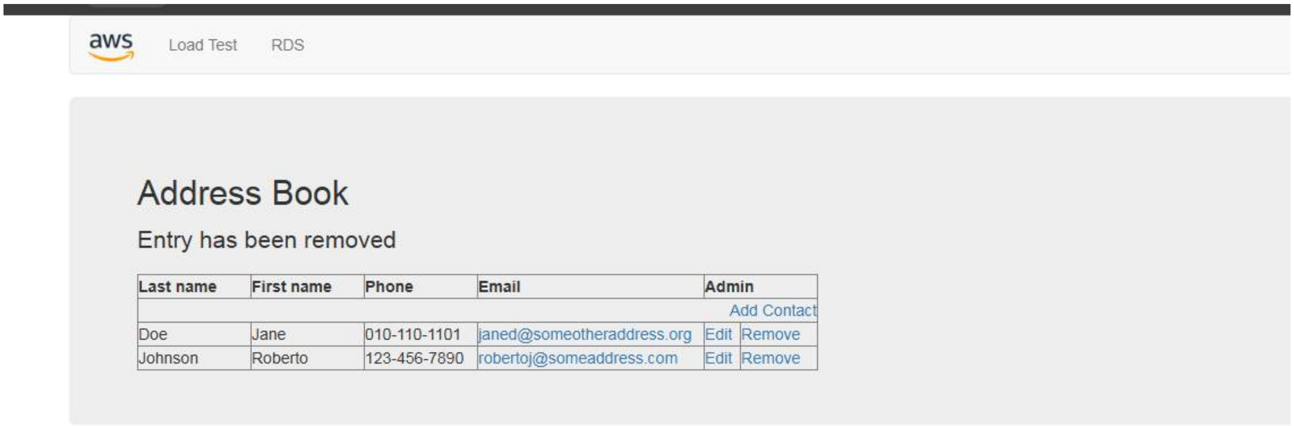
6. Enter username main and password lab-password.

7. Click Submit to connect the database.



Endpoint	lab-db.crk4iek6w04q.us-east-1.rds.amazonaws.com
Database	lab
Username	main
Password	••••••••••••

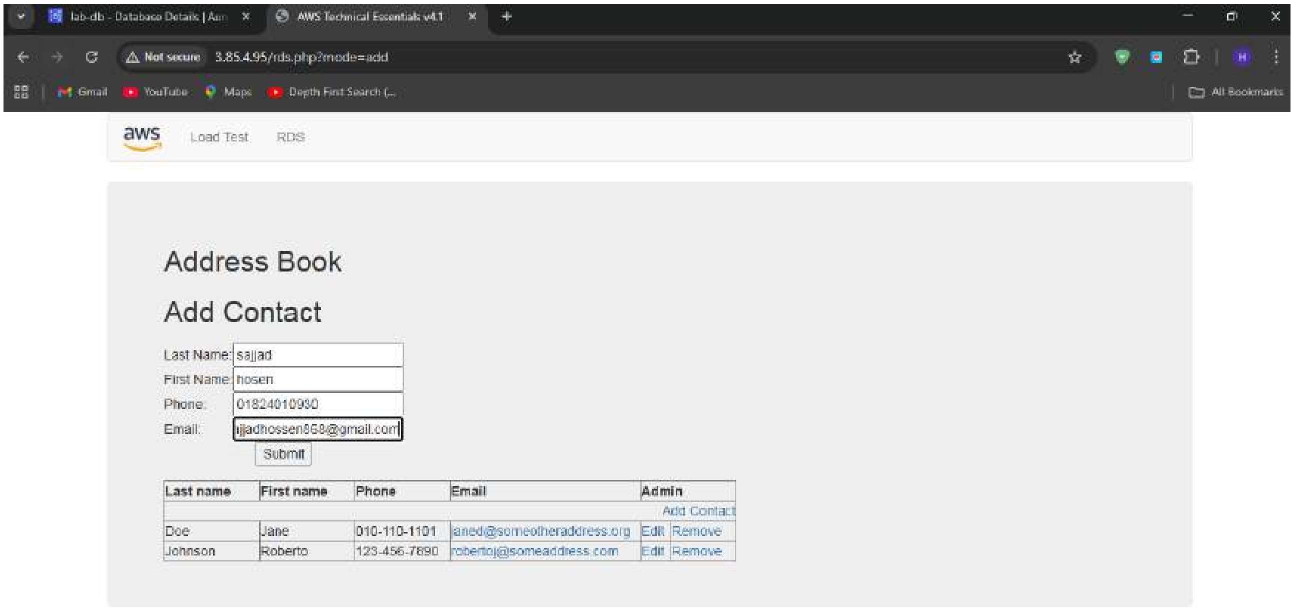
8. Add, edit, and delete contacts to test database interaction.



Address Book

Entry has been removed

Last name	First name	Phone	Email	Admin	
				Add Contact	
Doe	Jane	010-110-1101	janed@someotheraddress.org	Edit	Remove
Johnson	Roberto	123-456-7890	robertoj@someaddress.com	Edit	Remove

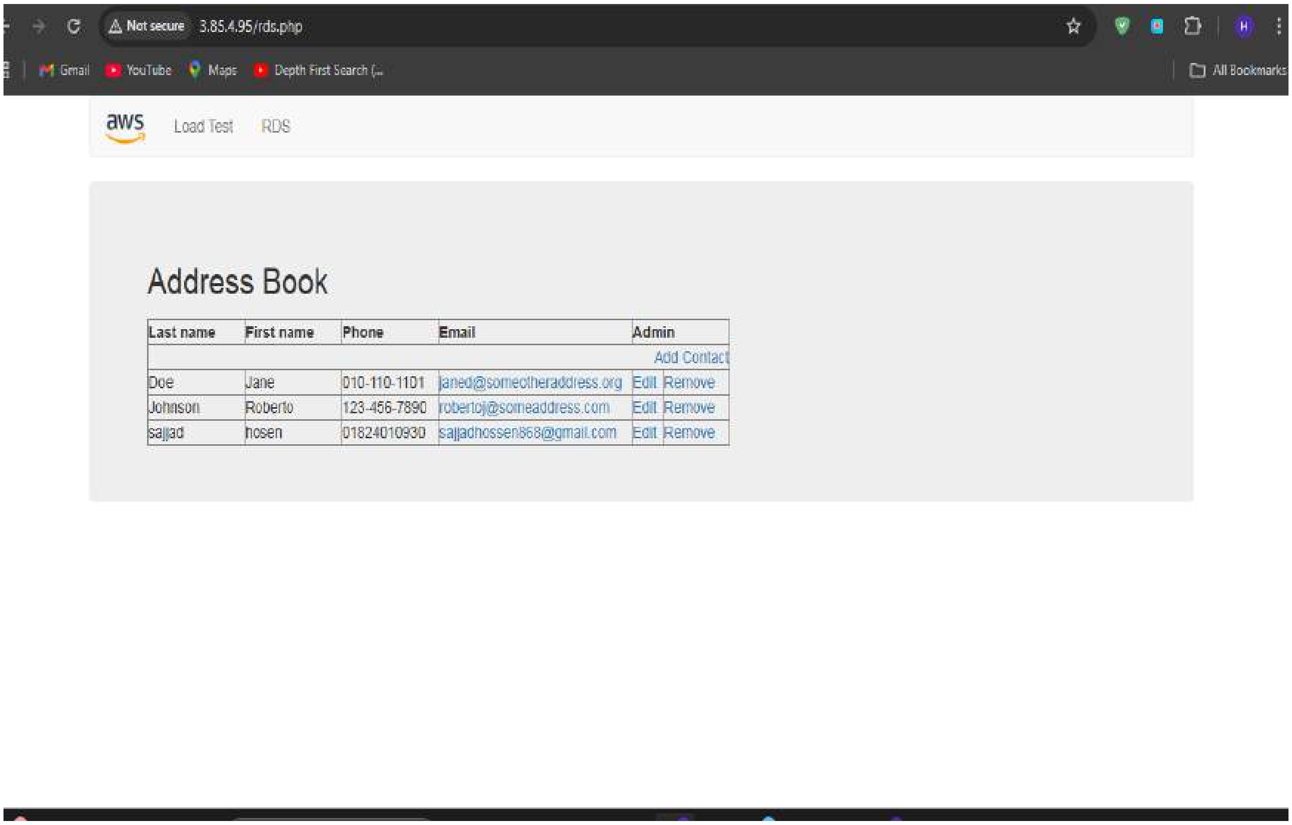

lab-db - Database Details | Aur
AWS Technical Essentials v4.1
Not secure
3.85.4.95/rds.php?mode=add
Gmail
YouTube
Maps
Depth First Search (...
All Bookmarks
aws
Load Test
RDS
Submit

Address Book

Add Contact

Last Name:	sajjad
First Name:	hosen
Phone:	01824010930
Email:	ijjadhossen868@gmail.com

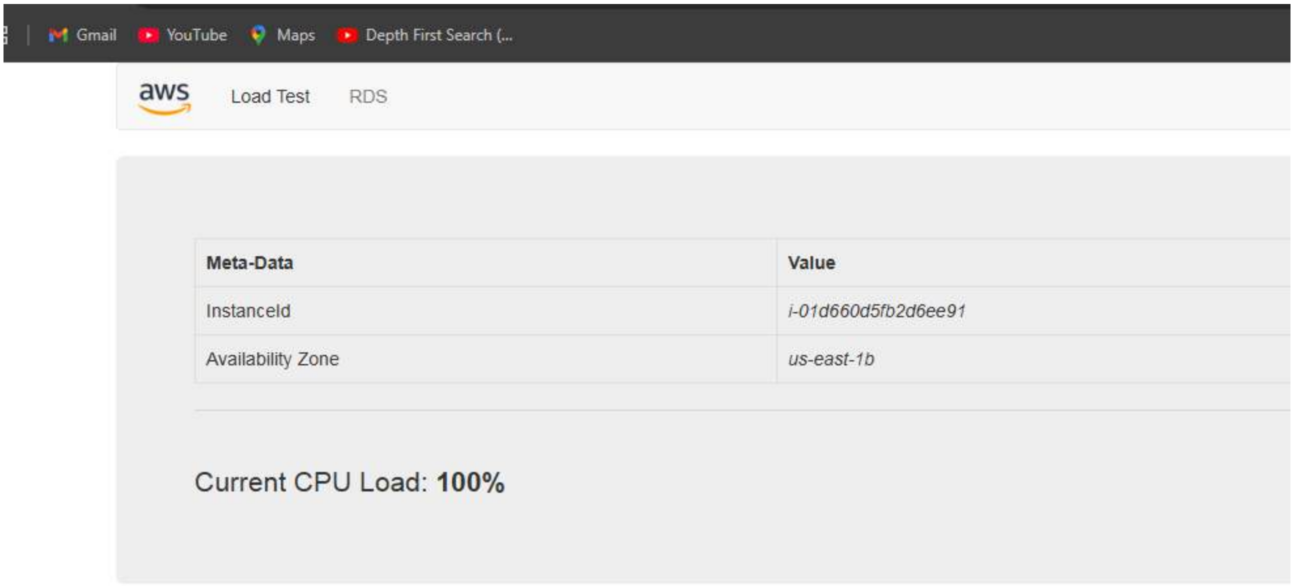
Last name	First name	Phone	Email	Admin	
				Add Contact	
Doe	Jane	010-110-1101	janed@someotheraddress.org	Edit	Remove
Johnson	Roberto	123-456-7890	robertoj@someaddress.com	Edit	Remove



Address Book

Last name	First name	Phone	Email	Admin
				Add Contact
Doe	Jane	010-110-1101	janed@someotheraddress.org	Edit Remove
Johnson	Roberto	123-456-7890	robertoj@someaddress.com	Edit Remove
sajjad	hosen	01824010930	sajjadhossen868@gmail.com	Edit Remove

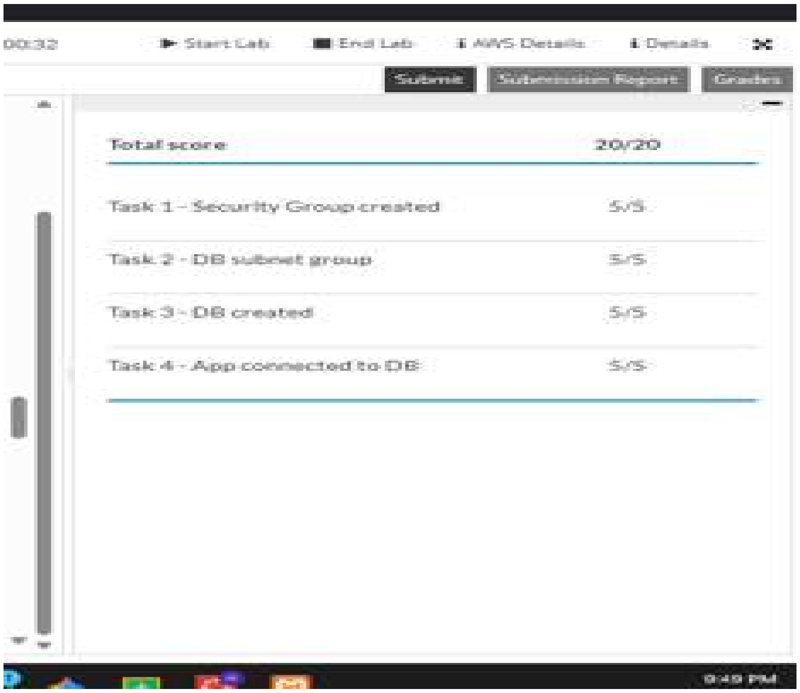
When load Current CPU Load 100%



Meta-Data	Value
InstanceId	*i-01d660d5fb2d6ee91*
Availability Zone	*us-east-1b*

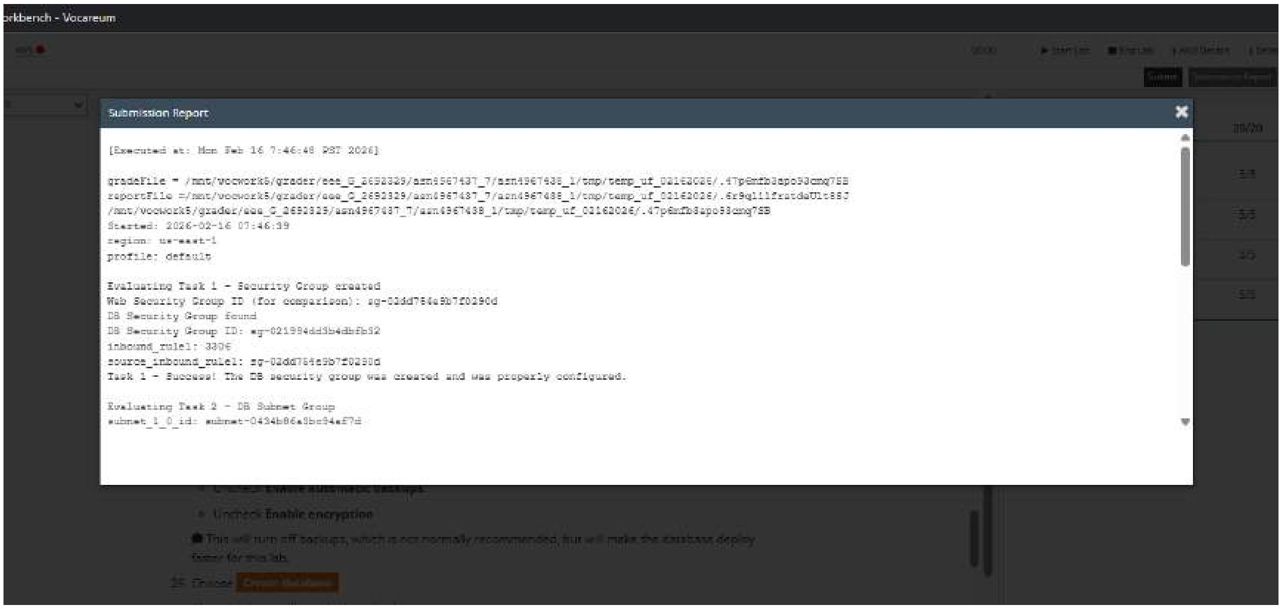
Current CPU Load: **100%**

9. Total Score



Total score	20/20
Task 1 – Security Group created	5/5
Task 2 - DB subnet group	5/5
Task 3 - DB created	5/5
Task 4 - App connected to DB	5/5

10. Report Submission:


orkbench - Vocareum
Start Lab
End Lab
AWS Details
Submit
Submission Report
20/20
5/5
5/5
5/5
5/5
Uncheck Enable automatic backups
Uncheck Enable encryption
This will turn off backups, which is not normally recommended, but will make the database deploy faster for this lab.
26. Choose Create database

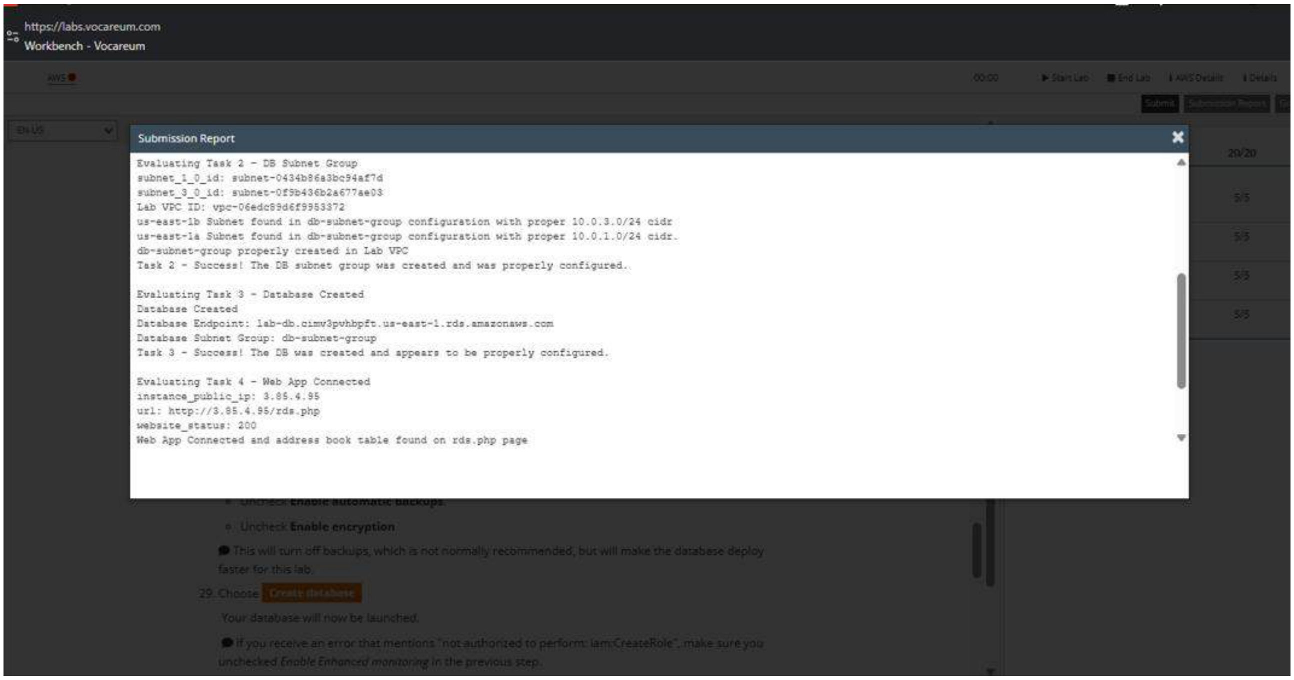
Submission Report

```
[Executed at: Mon Feb 16 7:46:48 PST 2026]

gradeFile = /mnt/vocwork5/grader/ase_G_2692329/asn4967437_7/asn4967438_1/tmp/temp_uf_02162026/.47p6mfb3apo93cmq75B
reportFile =/mnt/vocwork5/grader/ase_G_2692329/asn4967437_7/asn4967438_1/tmp/temp_uf_02162026/.6r9q111frstdaU1t88J
/mnt/vocwork5/grader/ase_G_2692329/asn4967437_7/asn4967438_1/tmp/temp_uf_02162026/.47p6mfb3apo93cmq75B
Started: 2026-02-16 07:46:39
region: us-east-1
profile: default

Evaluating Task 1 - Security Group created
Web Security Group ID (for comparison): sg-02dd754e9b7f0290d
DB Security Group found
DB Security Group ID: sg-021994dd3b4dbfb32
inbound_rule1: 3306
source_inbound_rule1: sg-02dd754e9b7f0290d
Task 1 - Success! The DB security group was created and was properly configured.

Evaluating Task 2 - DB Subnet Group
subnet_1_0_id: subnet-0434b86a3bc94af7d
```



```
Evaluating Task 2 - DB Subnet Group
subnet_1_0_id: subnet-0434b86a3bc94af7d
subnet_3_0_id: subnet-0f9b436b2a677ae03
Lab VPC ID: vpc-06edc89d6f9953372
us-east-1b Subnet found in db-subnet-group configuration with proper 10.0.3.0/24 cidr
us-east-1a Subnet found in db-subnet-group configuration with proper 10.0.1.0/24 cidr.
db-subnet-group properly created in Lab VPC
Task 2 - Success! The DB subnet group was created and was properly configured.

Evaluating Task 3 - Database Created
Database Created
Database Endpoint: lab-db.cimv3pvhbpft.us-east-1.rds.amazonaws.com
Database Subnet Group: db-subnet-group
Task 3 - Success! The DB was created and appears to be properly configured.

Evaluating Task 4 - Web App Connected
instance_public_ip: 3.85.4.95
url: http://3.85.4.95/rds.php
website_status: 200
Web App Connected and address book table found on rds.php page
```

- Uncheck **Enable automatic backups**.
- Uncheck **Enable encryption**

This will turn off backups, which is not normally recommended, but will make the database deploy faster for this lab.

29. Choose Create database

Your database will now be launched.

If you receive an error that mentions "not authorized to perform: iam:CreateRole", make sure you unchecked *Enable Enhanced monitoring* in the previous step.

4. Conclusion

In this lab, a secure and highly available MySQL database was successfully deployed using Amazon RDS. Proper networking and security configurations were implemented to allow controlled communication between the EC2 web server and the database. The Multi-AZ deployment ensured high availability and data replication across Availability Zones. Finally, the web application was connected to the database, and CRUD operations were performed successfully, demonstrating real-world cloud-based application and database integration.