

School of Computer Science, Engineering and Applications (SCSEA)

B. Tech TY (CCSA)

Subject: Cloud Architecture And Protocol

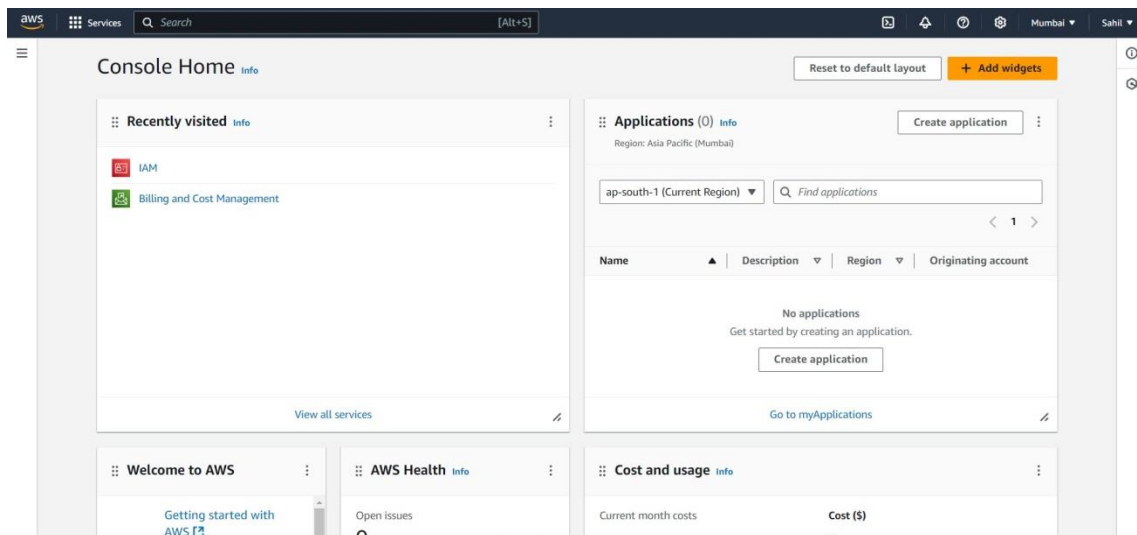
Name of the Student: Sahil S. Mandawgade

PRN: 20220802265

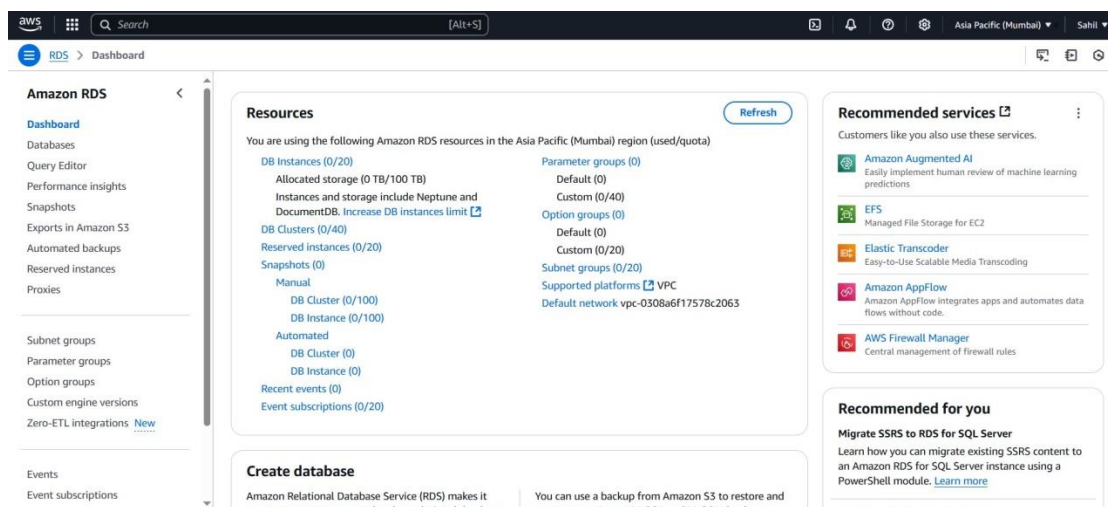
Title of Practical: **1. AWS RDS: Configuring Multi-Connection MySQL Endpoints for Seamless Connectivity via MySQL Workbench.**

Procedure:

Step 1: Login to your AWS Console.



Step 2: Search Bar - Type "RDS" - RDS Dashboard will Open.



Step 3: Select Databases from left sidebar - Select "Create Database".

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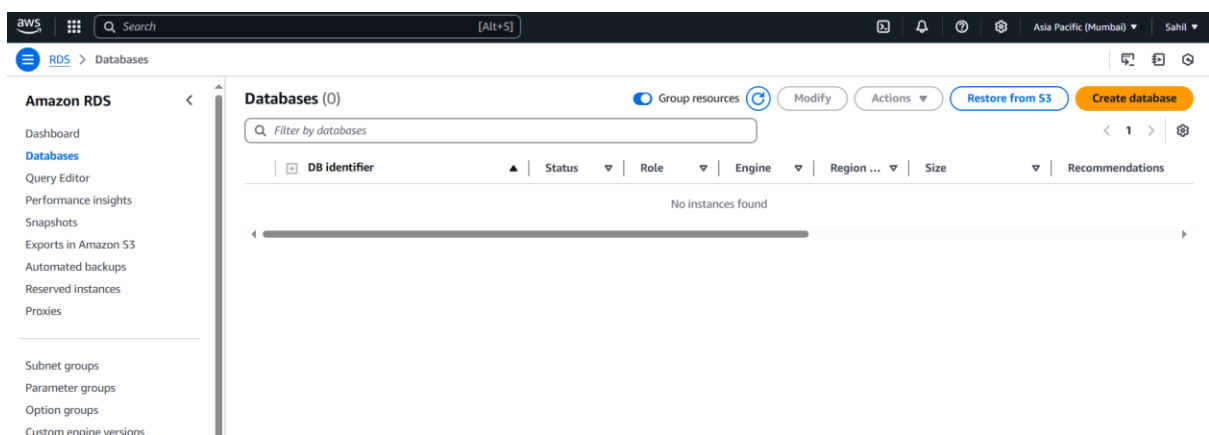
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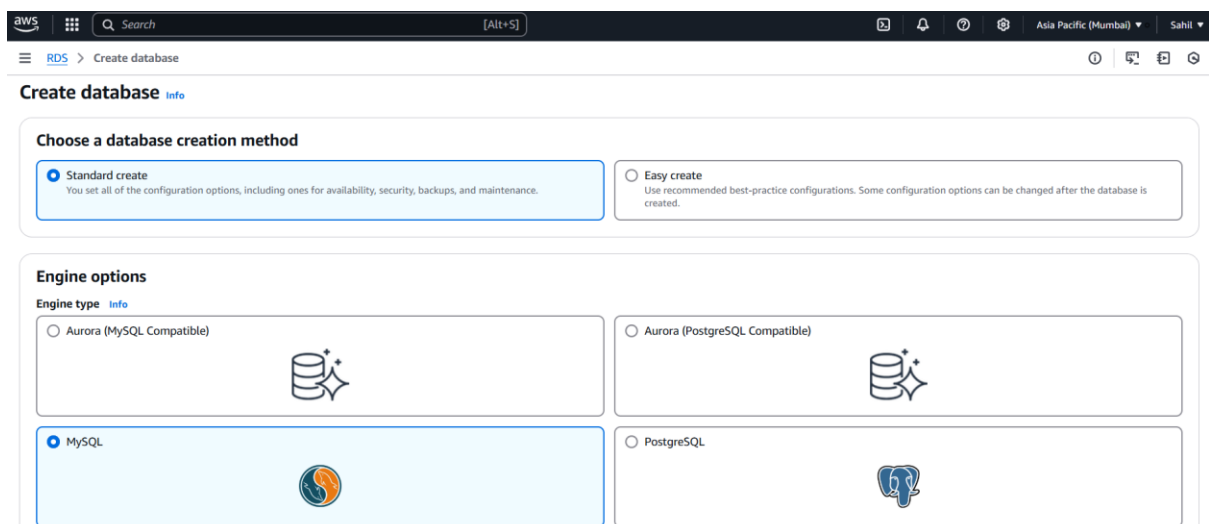
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Step 4: Select “Standard” option in database creation method and select “MySQL” in Engine Type.



Scroll down and Select “Free Tier” Option under Templates.

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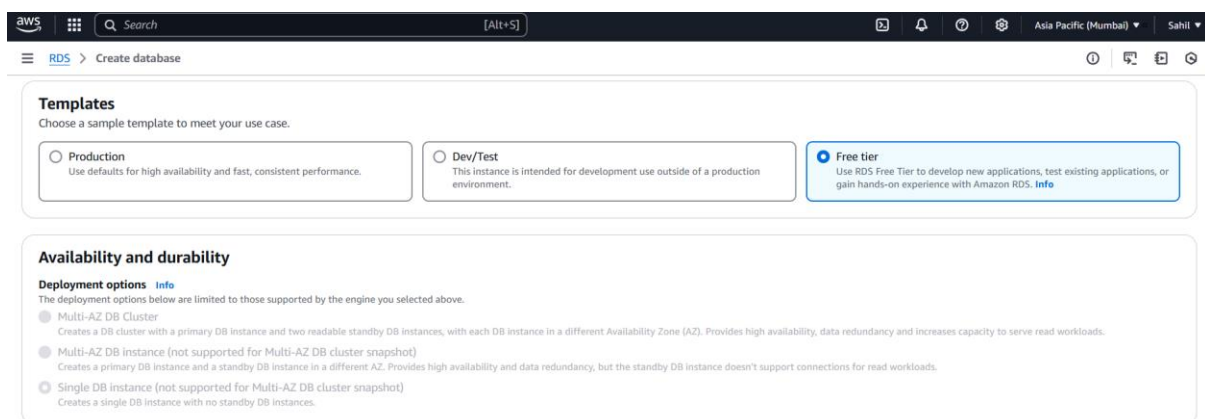
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Templates
Choose a sample template to meet your use case.

☐ 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](#)

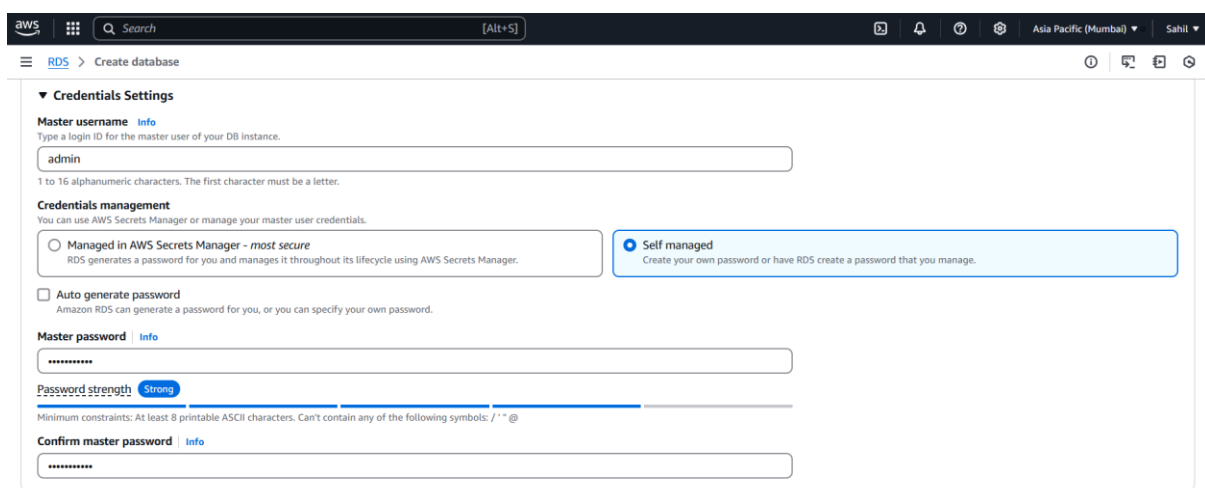
Availability and durability
[Deployment options](#) [Info](#)
The deployment options below are limited to those supported by the engine you selected above.

☒ Multi-AZ DB Cluster
Creates a DB cluster with a primary DB instance and two readable standby DB instances, with each DB instance in a different Availability Zone (AZ). Provides high availability, data redundancy and increases capacity to serve read workloads.

☐ Multi-AZ DB instance (not supported for Multi-AZ DB cluster snapshot)
Creates a primary DB instance and a standby DB instance in a different AZ. Provides high availability and data redundancy, but the standby DB instance doesn't support connections for read workloads.

☐ Single DB instance (not supported for Multi-AZ DB cluster snapshot)
Creates a single DB instance with no standby DB instances.

Assign your DB Instance name - Keep Master Username as Admin only - Select Self-Managed for Credentials Management - Type in your password and confirm it.



▼ Credentials Settings

Master username [Info](#)
Type a login ID for the master user of your DB instance.

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](#)

Password strength [Strong](#)
Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ' * @

Confirm master password [Info](#)

Allot it 5GB in storage tab - Connectivity Tab - Keep everything as it is, just update Public Access to "YES" and VPC Security Group to your Existing SG.

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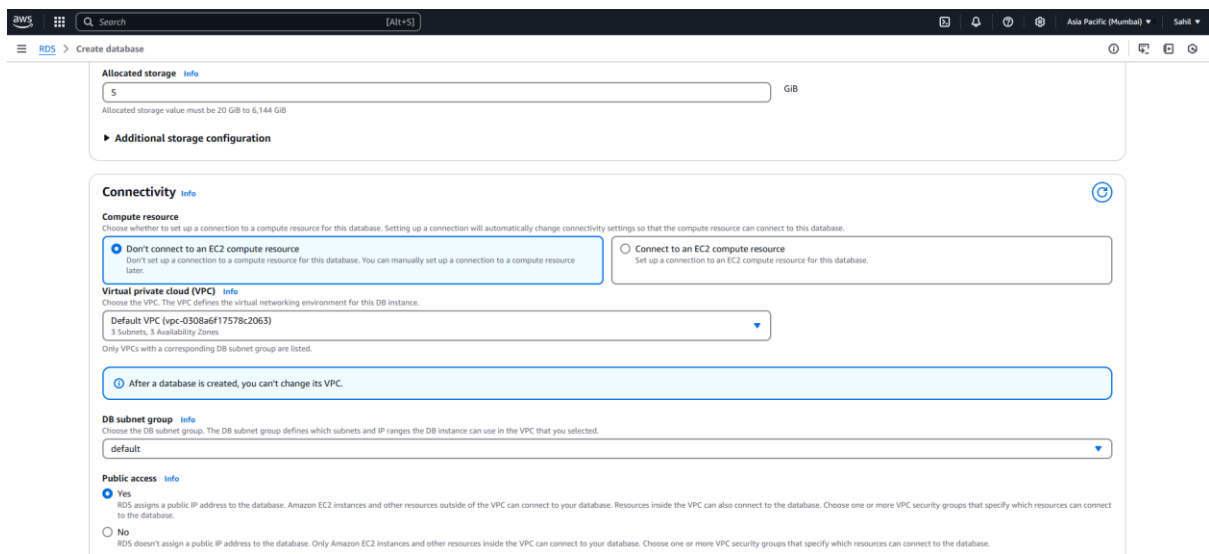
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The screenshot shows the AWS RDS 'Create database' console. The 'Allocated storage' is set to 5 GiB. Under 'Connectivity', the 'Don't connect to an EC2 compute resource' option is selected. The 'Virtual private cloud (VPC)' is set to 'Default VPC (vpc-0308a6f17578c2063)'. The 'DB subnet group' is set to 'default'. Under 'Public access', the 'Yes' option is selected, indicating that RDS will assign a public IP address to the database.

Additional Information - Assign Initial Database Name - Untick 'Monitoring, backup, deletion protection and encryption' as they demand extra charges and choose 'No preference' under 'Maintenance window'. - Click on "Create Database".

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Database options

Initial database name [Info](#)

DB_2265

If you do not specify a database name, Amazon RDS does not create a database.

DB parameter group [Info](#)

default.mysql8.0

Option group [Info](#)

default:mysql-8-0

Backup

☐ Enable automated backups

Creates a point-in-time snapshot of your database

Encryption

☐ 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](#)

Log exports

Select the log types to publish to Amazon CloudWatch Logs

☐ Audit log

☐ Error log

☐ General log

☐ Slow query log

IAM role

The following service-linked role is used for publishing logs to CloudWatch Logs.

RDS service-linked role

Maintenance

Auto minor version upgrade [Info](#)

☐ Enable auto minor version upgrade

Enabling auto minor version upgrade will automatically upgrade to new minor versions as they are released. The automatic upgrades occur during the maintenance window for the database.

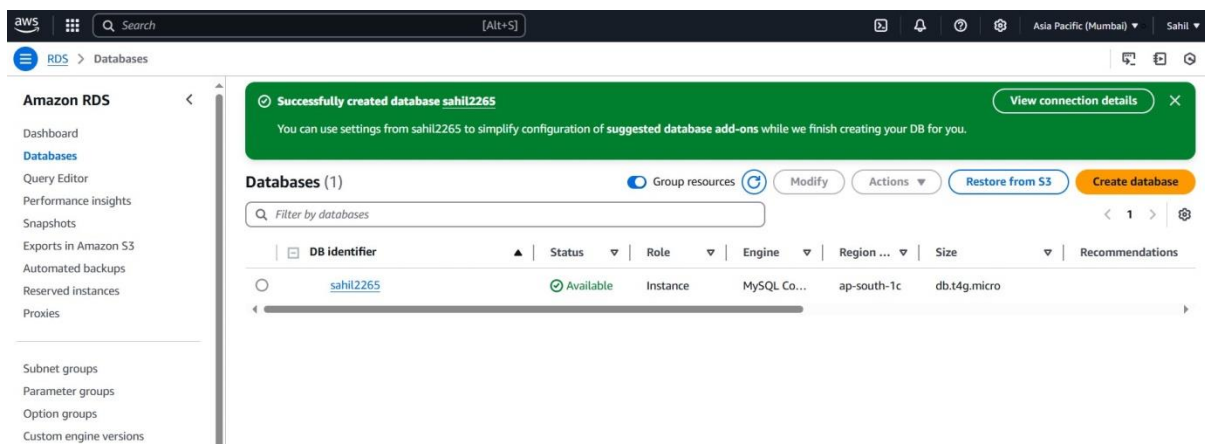
Maintenance window [Info](#)

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

☐ Choose a window

☒ No preference

RDS Successfully created!



aws Search [Alt+S]

RDS > Databases

Amazon RDS

Dashboard

Databases

Query Editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Successfully created database sahil2265

You can use settings from sahil2265 to simplify configuration of suggested database add-ons while we finish creating your DB for you.

View connection details

Databases (1)

Group resources

Modify

Actions

Restore from S3

Create database

Filter by databases

DB identifier	Status	Role	Engine	Region ...	Size	Recommendations
sahil2265	Available	Instance	MySQL Co...	ap-south-1c	db.t4g.micro	

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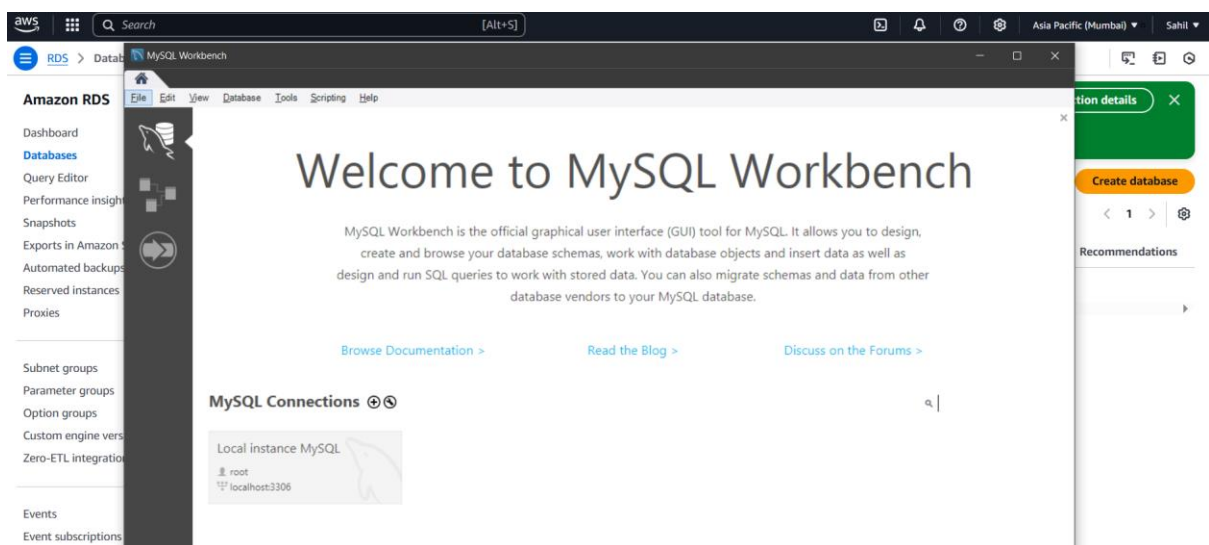
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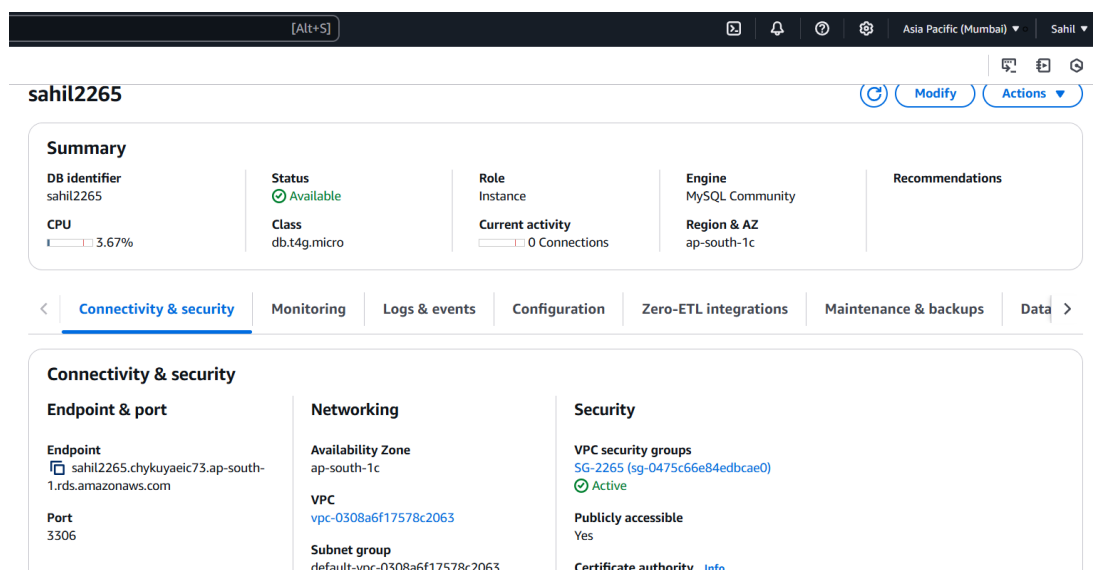
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Step 5: Open MySQL Work Bench.



Open AWS - Go to RDS - Select your recently created database - copy End point URL.



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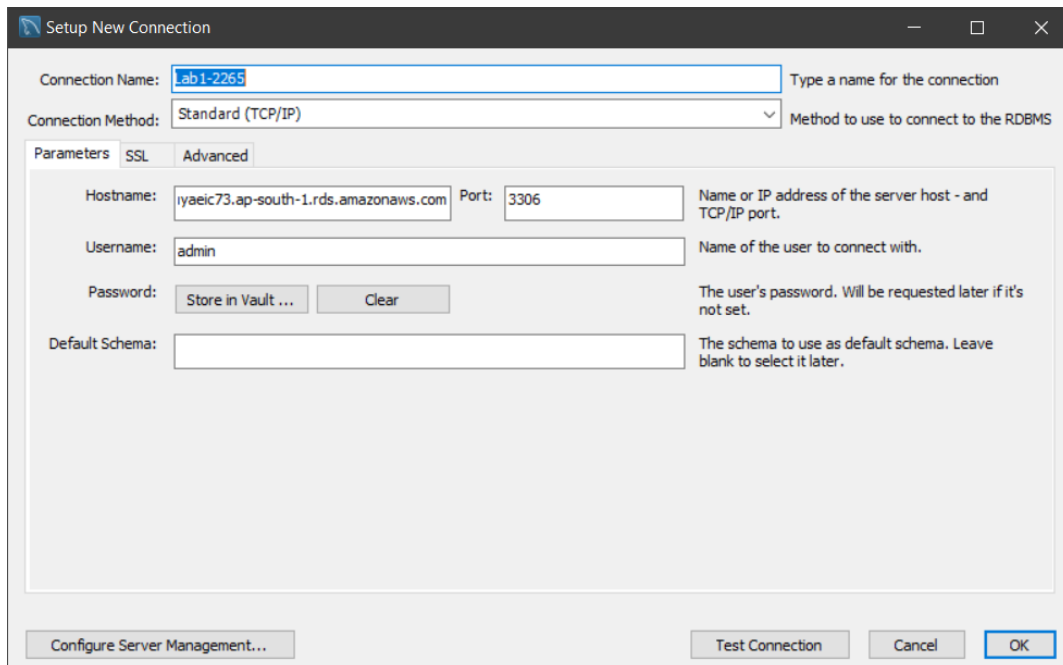
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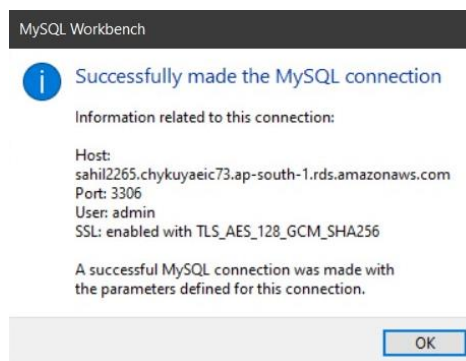
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Go back to MySQL - Click on the “+” icon near keyword “connections” above your local instance - paste end point into hostname and type “admin” in the username column.



Test Connection - Enter Your Master Password you assigned while creating the database.



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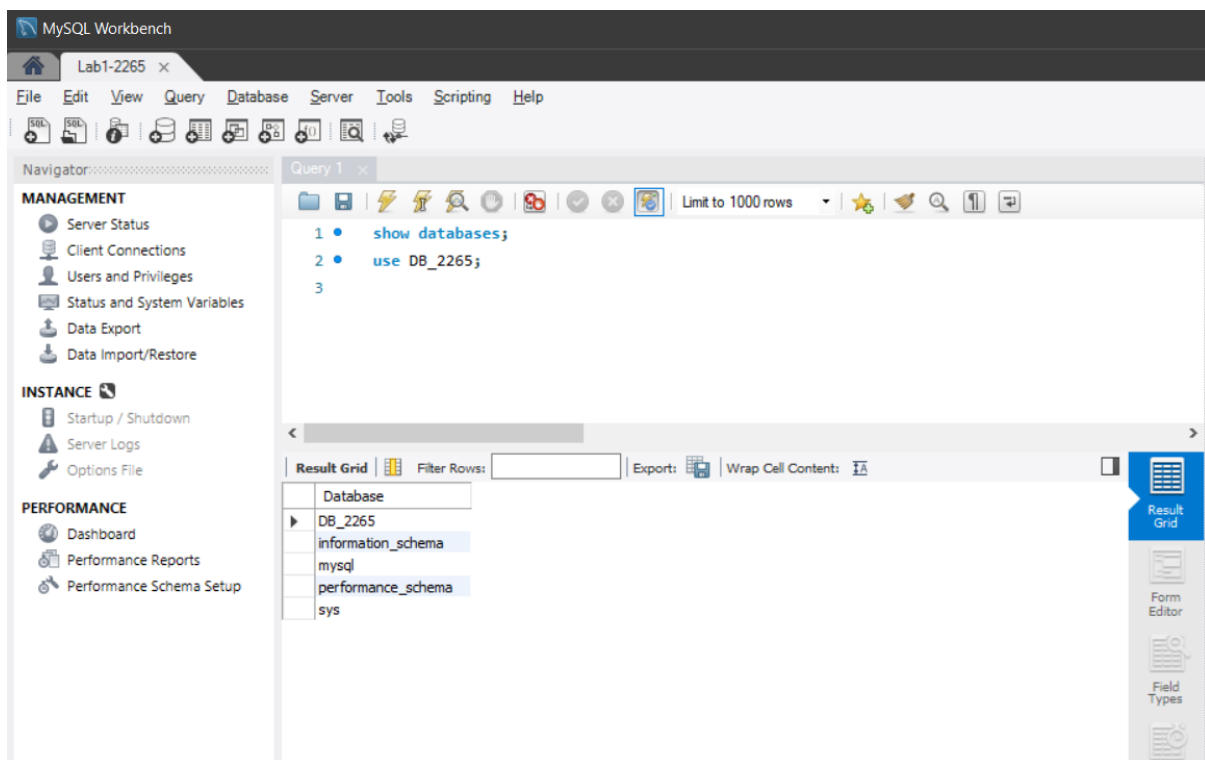
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As you can see, we have successfully accessed our RDS created on AWS from our local machine - you can perform SQL operations on it as well.



Step 6: Deletion Process:

RDS - Delete connection from your MySQL.

Go to AWS Console - RDS - Snapshots - Check whether there is any snapshot - just to be sure as it will pile up charges without you knowing.

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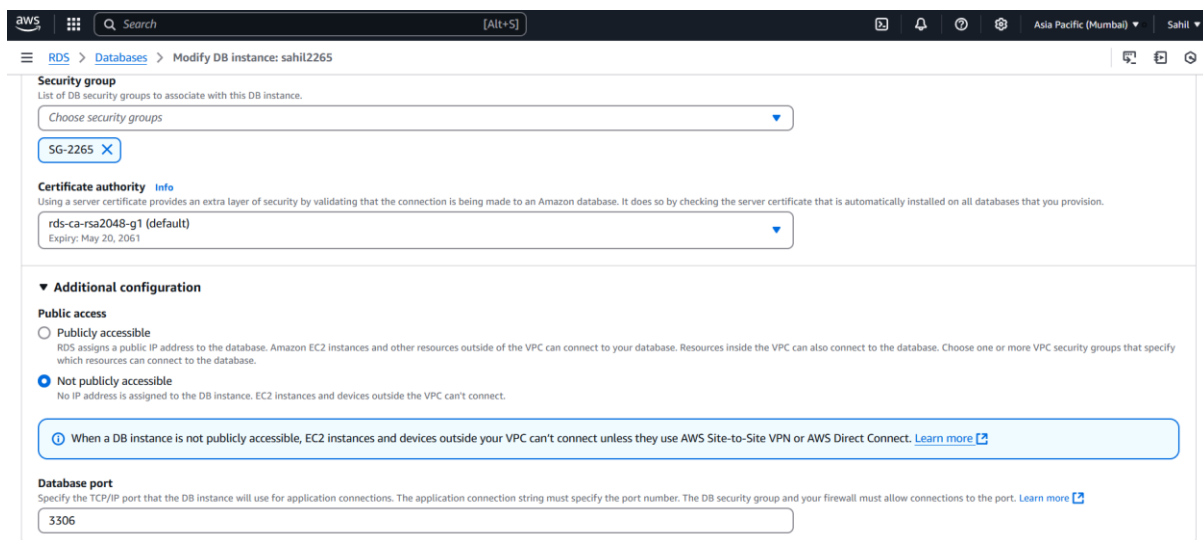
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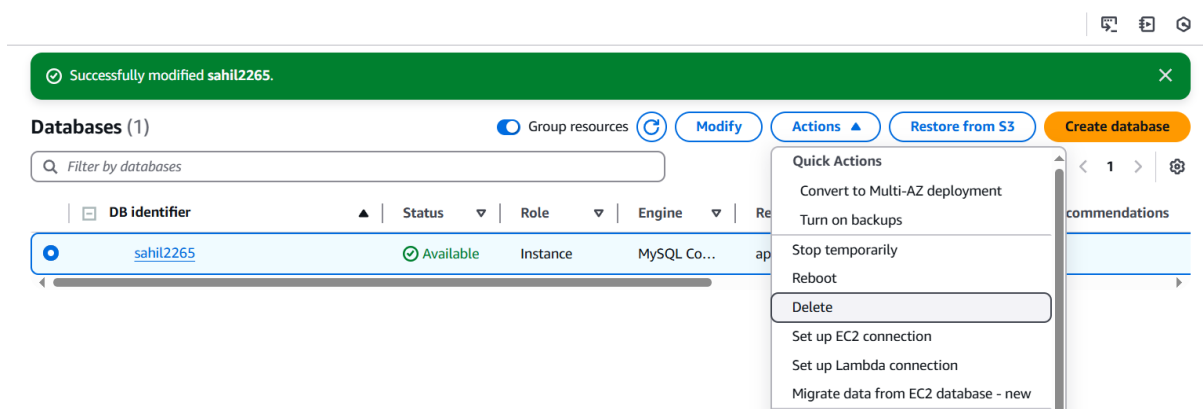
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Go to Databases - Select your Database - Modify - Scroll down to additional configuration > select "Not Publicly Accessed" - Continue to Modify DB Instance.



The screenshot shows the AWS RDS 'Modify DB instance' page for instance 'sahil2265'. The 'Security group' is set to 'SG-2265'. The 'Certificate authority' is 'rds-ca-rsa2048-g1 (default)'. Under 'Additional configuration', 'Public access' is disabled, and 'Not publicly accessible' is selected. A note states: 'When a DB instance is not publicly accessible, EC2 instances and devices outside your VPC can't connect unless they use AWS Site-to-Site VPN or AWS Direct Connect.' The 'Database port' is set to '3306'.

Select Database - Actions - Click Delete.



The screenshot shows the AWS RDS 'Databases' list. A green notification bar at the top says 'Successfully modified sahil2265'. The 'Actions' menu is open for the database 'sahil2265', showing options like 'Convert to Multi-AZ deployment', 'Turn on backups', 'Stop temporarily', 'Reboot', 'Delete', 'Set up EC2 connection', 'Set up Lambda connection', and 'Migrate data from EC2 database - new'. The 'Delete' option is highlighted.

Untick "Create final snapshot" - Check the Acknowledgement Box - Confirm deletion by typing "delete me" in the respective box.