

NAME: KSHITIJ GUPTA

Enrolment Number: 21162101007

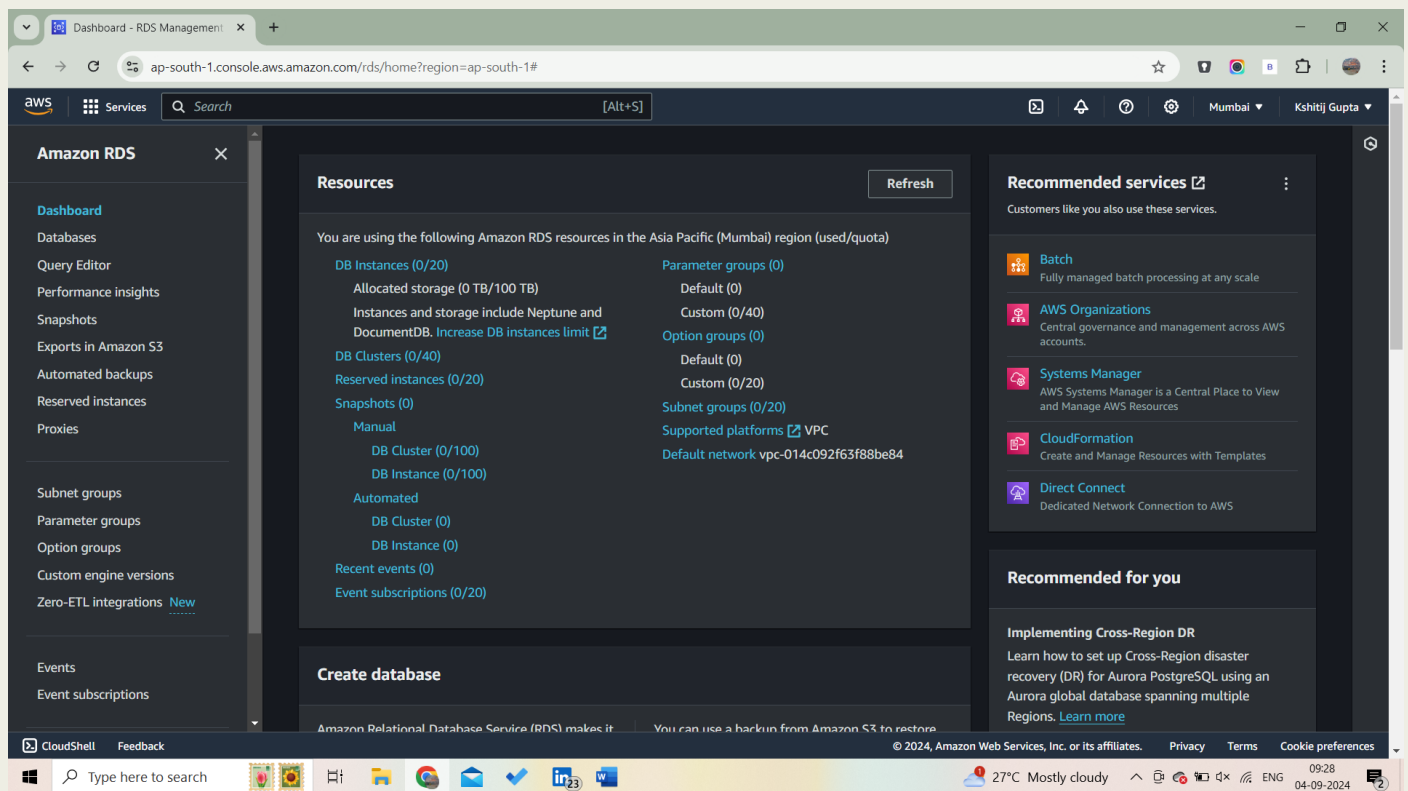
Sub: CCE

Practical – 7[Batch-71]

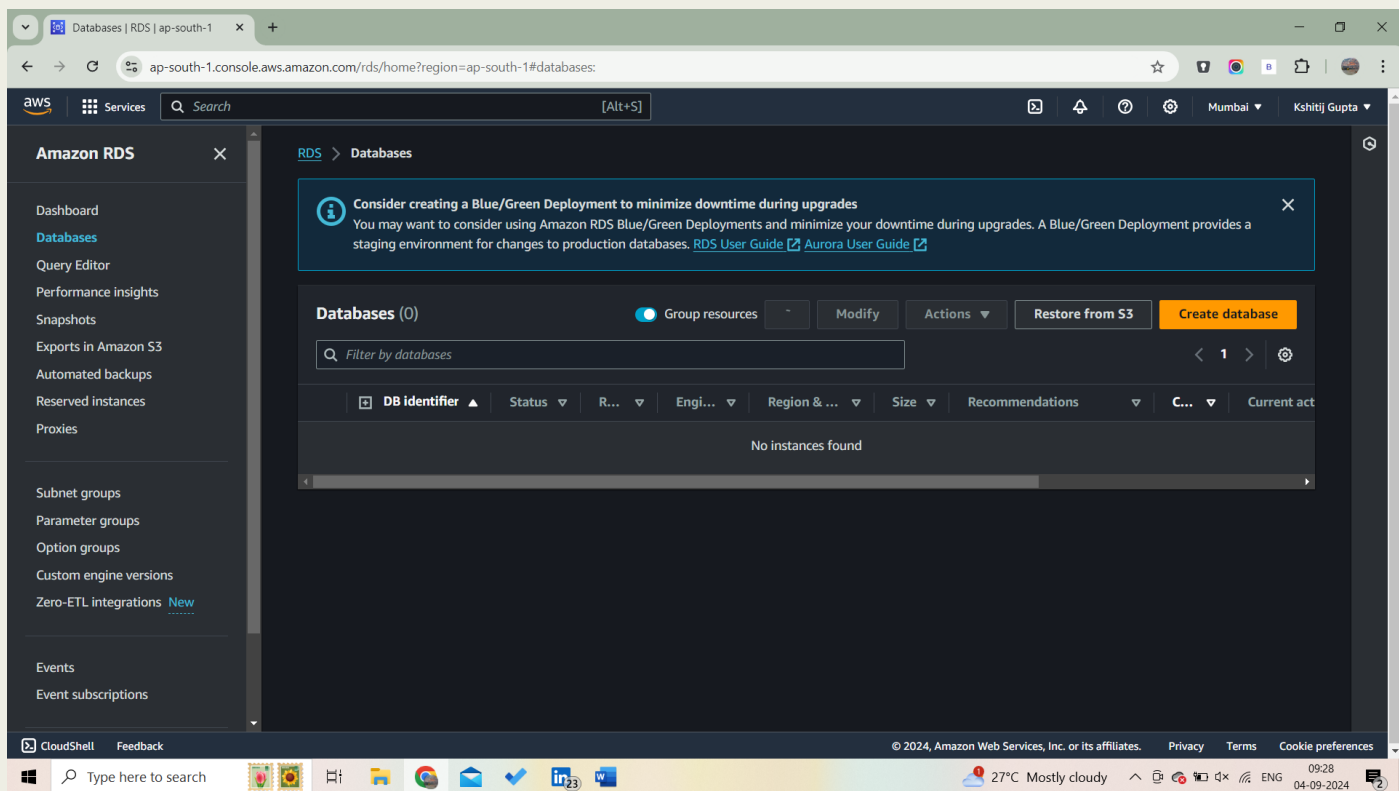
Demonstration of Database Service RDS along with configuration.

Steps:

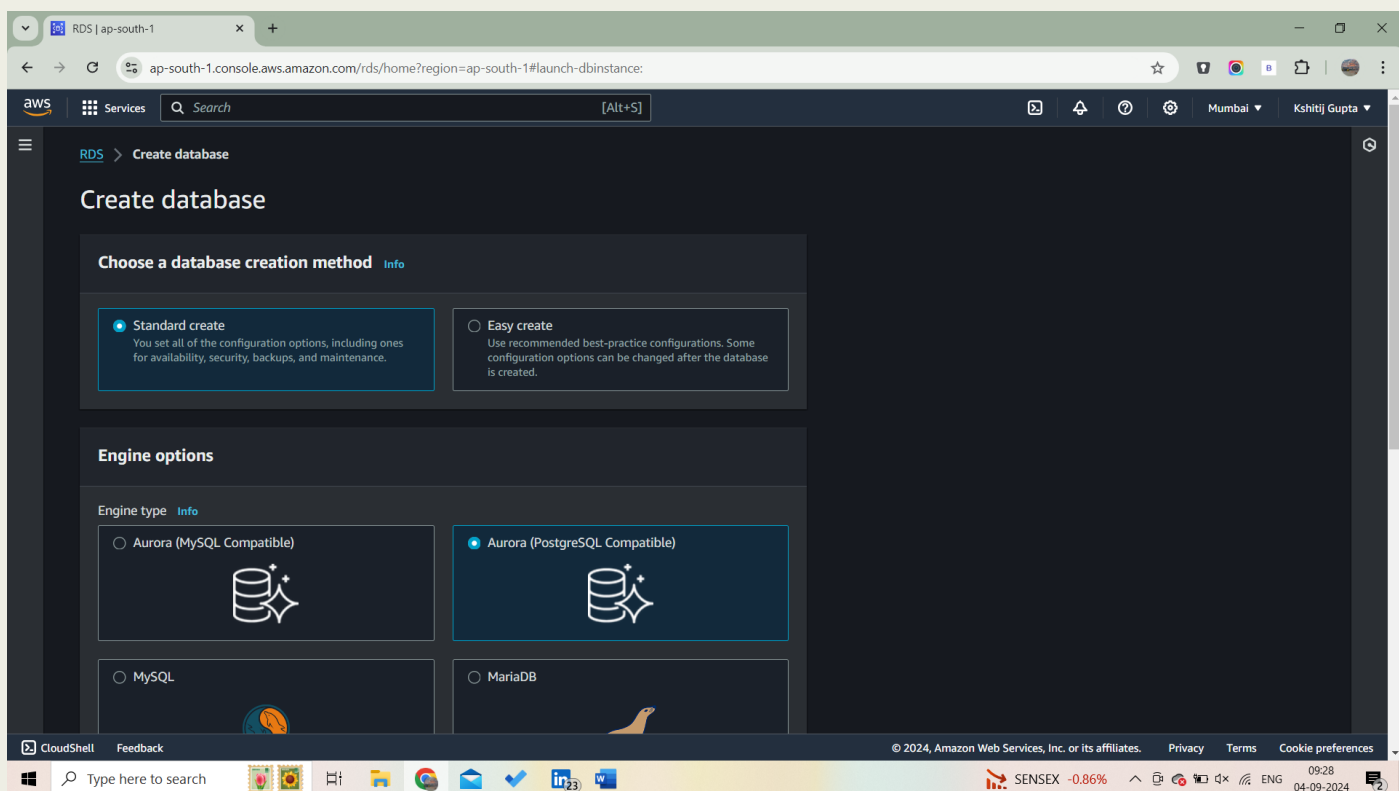
- Go to RDS dashboard



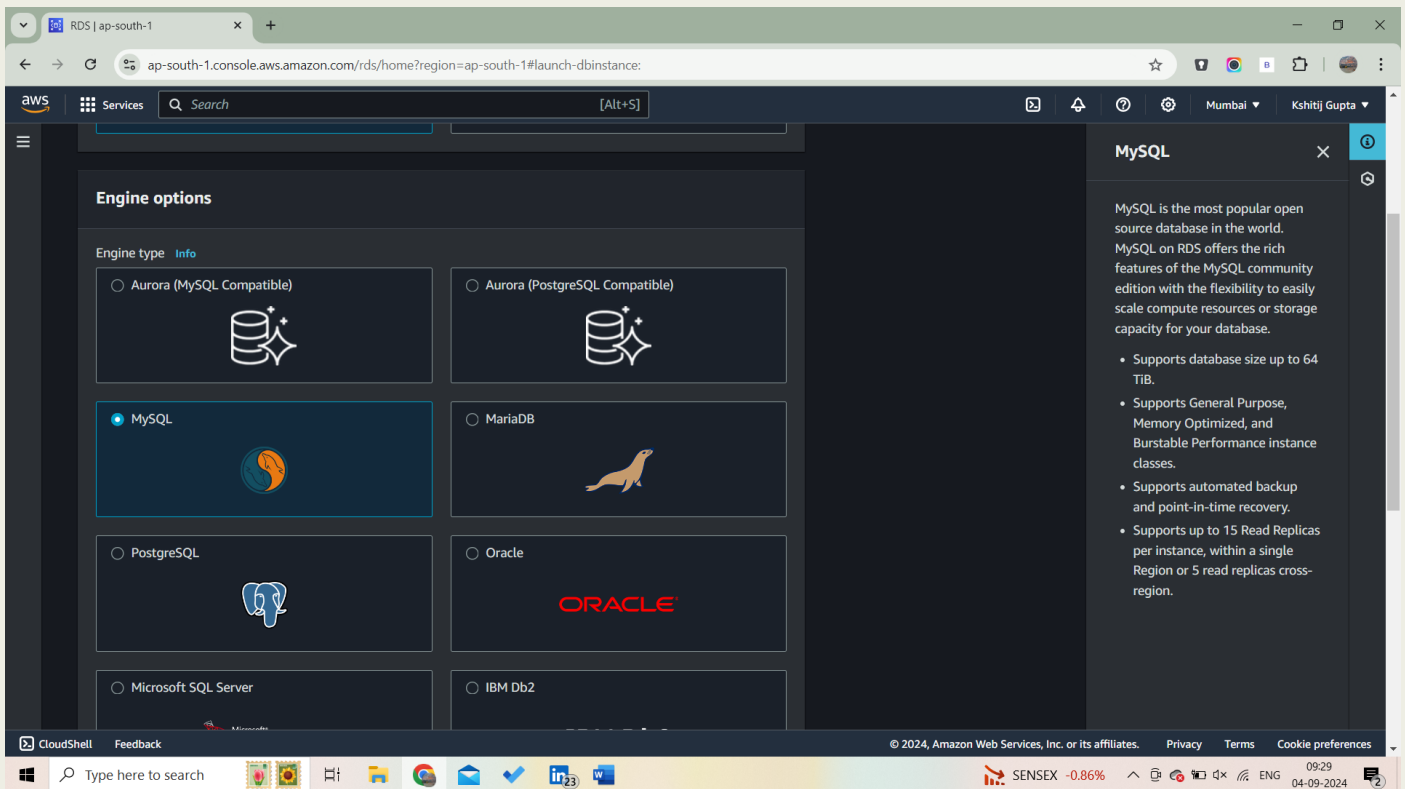
Scroll down and click on create database



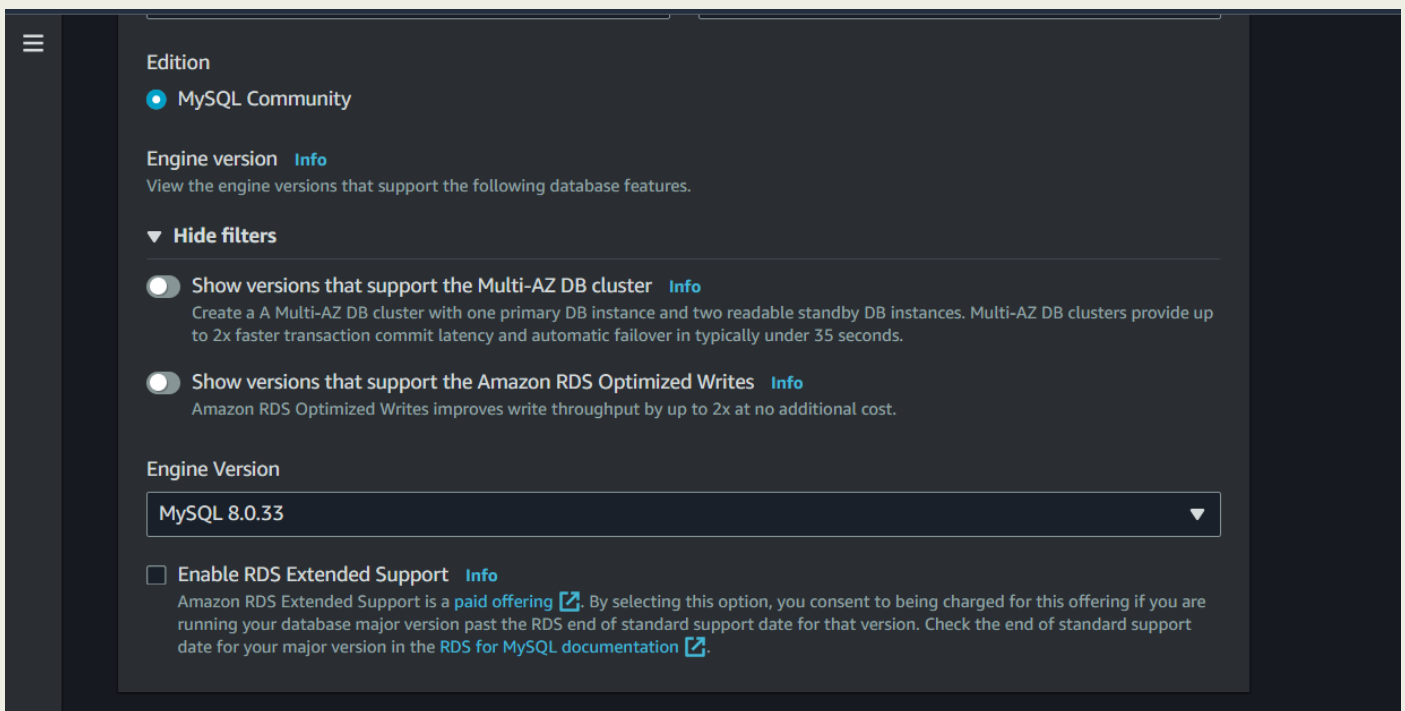
Select standard mode



Select MySQL engine



Select the version for the engine



Select free tier template

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.

Now provide database name and master username

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.

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 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.

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.

Set and confirm password

aws

Services

Search

[Alt+S]

Mumbai

KautikGupta

▼ Credentials Settings

Master username

Info

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

admin

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

Very strong

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

Confirm master password

Info

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Select the db instance type

DB instance class

Info

▼ Hide filters

☒ Show instance classes that support Amazon RDS Optimized Writes

Info

Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

☐ Include previous generation classes

☐ Standard classes (includes m classes)

☐ Memory optimized classes (includes r and x classes)

☒ Burstable classes (includes t classes)

db.t3.micro

2 vCPUs 1 GiB RAM Network: 2,085 Mbps

Configure storage

Storage

Storage type

Info

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

General Purpose SSD (gp2)

Baseline performance determined by volume size

Allocated storage

Info

20

GiB

The minimum value is 20 GiB and the maximum value is 6,144 GiB

After you modify the storage for a DB instance, the status of the DB instance will be in storage-optimization. Your instance will remain available as the storage-optimization operation completes.

[Learn more](#)

► Storage autoscaling

Currently not connecting it to EC2 instance

The screenshot shows the 'Connectivity' configuration page for an Amazon RDS instance. It includes sections for 'Compute resource', 'Network type', and 'Virtual private cloud (VPC)'. The 'Compute resource' section has two options: 'Don't connect to an EC2 compute resource' (selected) and 'Connect to an EC2 compute resource'. The 'Network type' section has two options: 'IPv4' (selected) and 'Dual-stack mode'. The 'Virtual private cloud (VPC)' section shows a dropdown menu with 'Default VPC (vpc-075f109655381d042)' selected. A note at the bottom states: 'After a database is created, you can't change its VPC.'

Connectivity [Info](#)

Compute resource
Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

☒ **Don't connect to an EC2 compute resource**
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.

☐ **Connect to an EC2 compute resource**
Set up a connection to an EC2 compute resource for this database.

Network type [Info](#)
To use dual-stack mode, make sure that you associate an IPv6 CIDR block with a subnet in the VPC you specify.

☒ **IPv4**
Your resources can communicate only over the IPv4 addressing protocol.

☐ **Dual-stack mode**
Your resources can communicate over IPv4, IPv6, or both.

Virtual private cloud (VPC) [Info](#)
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

Default VPC (vpc-075f109655381d042)
1 Subnets, 1 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change its VPC.

Keep public access as No and select default VPC and select the AZ

The screenshot shows the 'VPC security group (firewall)' configuration page for an Amazon RDS instance. It includes sections for 'VPC security group (firewall)', 'Existing VPC security groups', 'Availability Zone', 'RDS Proxy', and 'Certificate authority - optional'. The 'VPC security group (firewall)' section has two options: 'Choose existing' (selected) and 'Create new'. The 'Existing VPC security groups' section shows a dropdown menu with 'default' selected. The 'Availability Zone' section shows a dropdown menu with 'ap-south-1a' selected. The 'RDS Proxy' section has a checkbox for 'Create an RDS Proxy' which is unchecked. The 'Certificate authority - optional' section shows a dropdown menu with 'rds-ca-rsa2048-g1 (default)' selected.

VPC security group (firewall) [Info](#)
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

☒ **Choose existing**
Choose existing VPC security groups

☐ **Create new**
Create new VPC security group

Existing VPC security groups

Choose one or more options

default X

Availability Zone [Info](#)

ap-south-1a

RDS Proxy
RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

☐ **Create an RDS Proxy** [Info](#)
RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#).

Certificate authority - optional [Info](#)
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rds-ca-rsa2048-g1 (default)
Expiry: May 20, 2061

If you don't select a certificate authority, RDS chooses one for you.

Here you can see the estimated costing

Estimated Monthly costs

| | |
|--------------|------------------|
| DB instance | 18.25 USD |
| Storage | 2.62 USD |
| Total | 20.87 USD |

This billing estimate is based on on-demand usage as described in [Amazon RDS Pricing](#). Estimate does not include costs for backup storage, IOs (if applicable), or data transfer.

Estimate your monthly costs for the DB Instance using the [AWS Simple Monthly Calculator](#).

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro, db.t3.micro or db.t4g.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

[Learn more about AWS Free Tier.](#)

When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page](#).

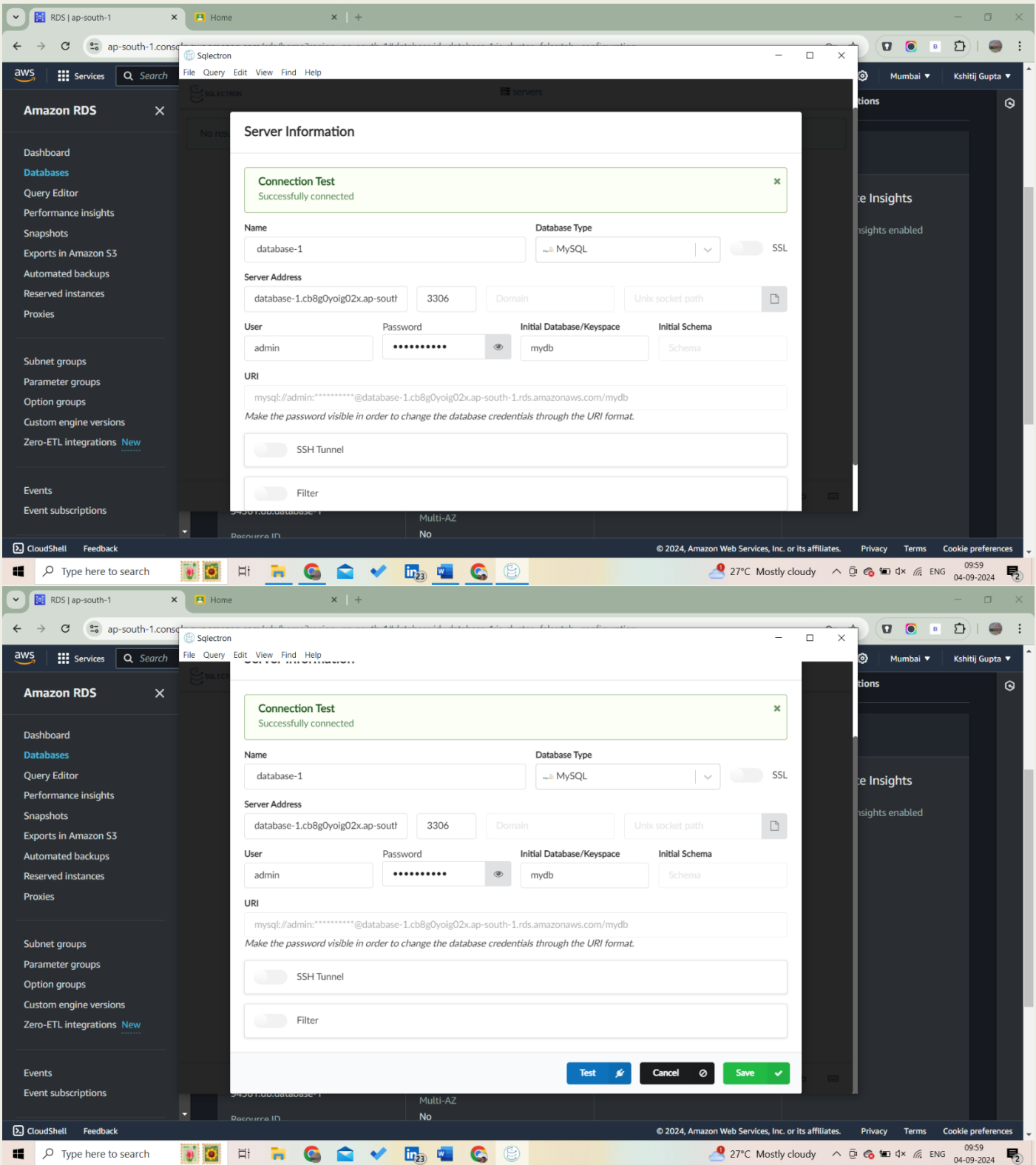
Now database is created:

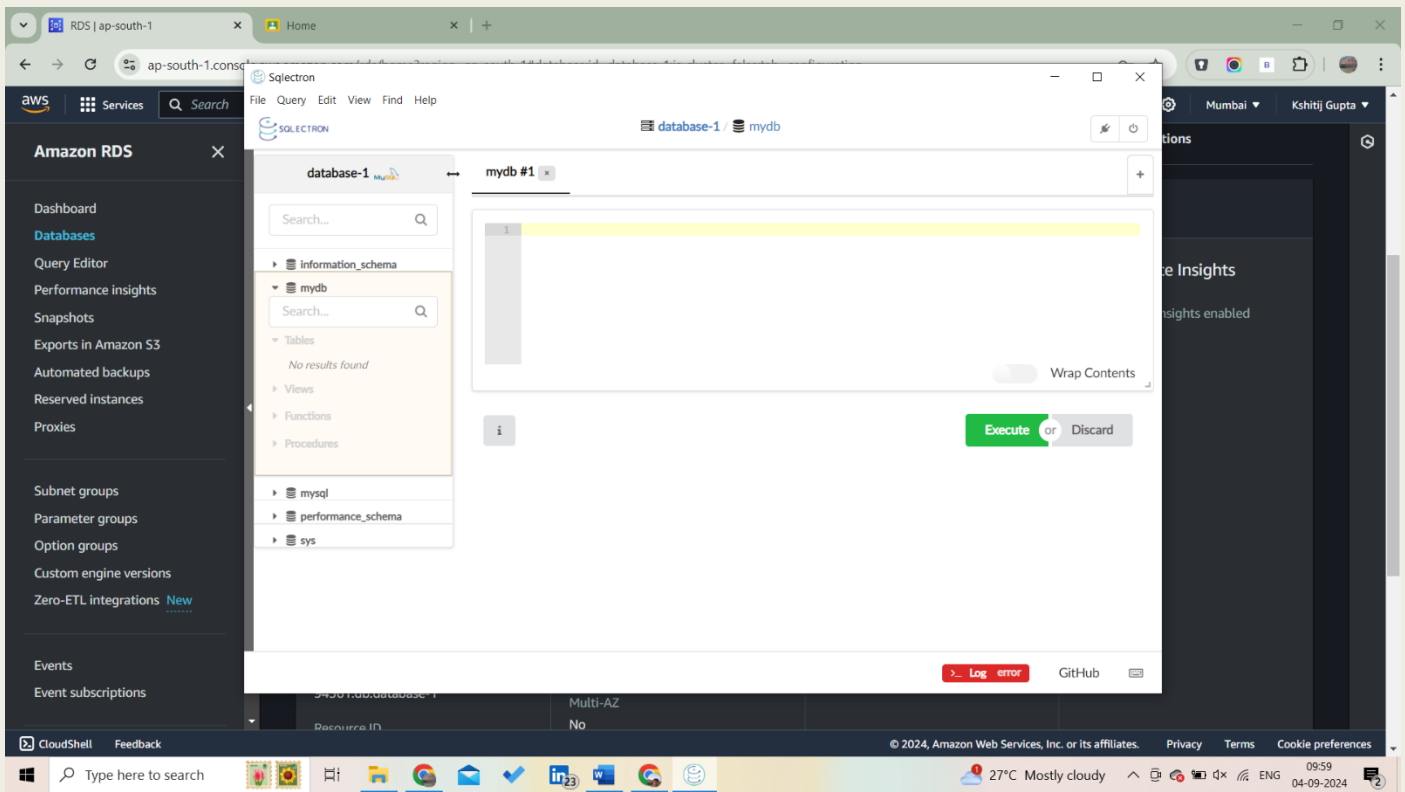
The screenshot displays the AWS Management Console interface for Amazon RDS. A prominent green notification banner at the top indicates that the database 'database-1' has been successfully created. Below the notification, a table lists the database instance details:

| DB identifier | Status | Role | Engine | Region & ... | Size | Recommendations | C... |
|---------------|-----------|----------|-----------------|--------------|-------------|-----------------|------|
| database-1 | Available | Instance | MySQL Community | ap-south-1a | db.t3.micro | - | - |

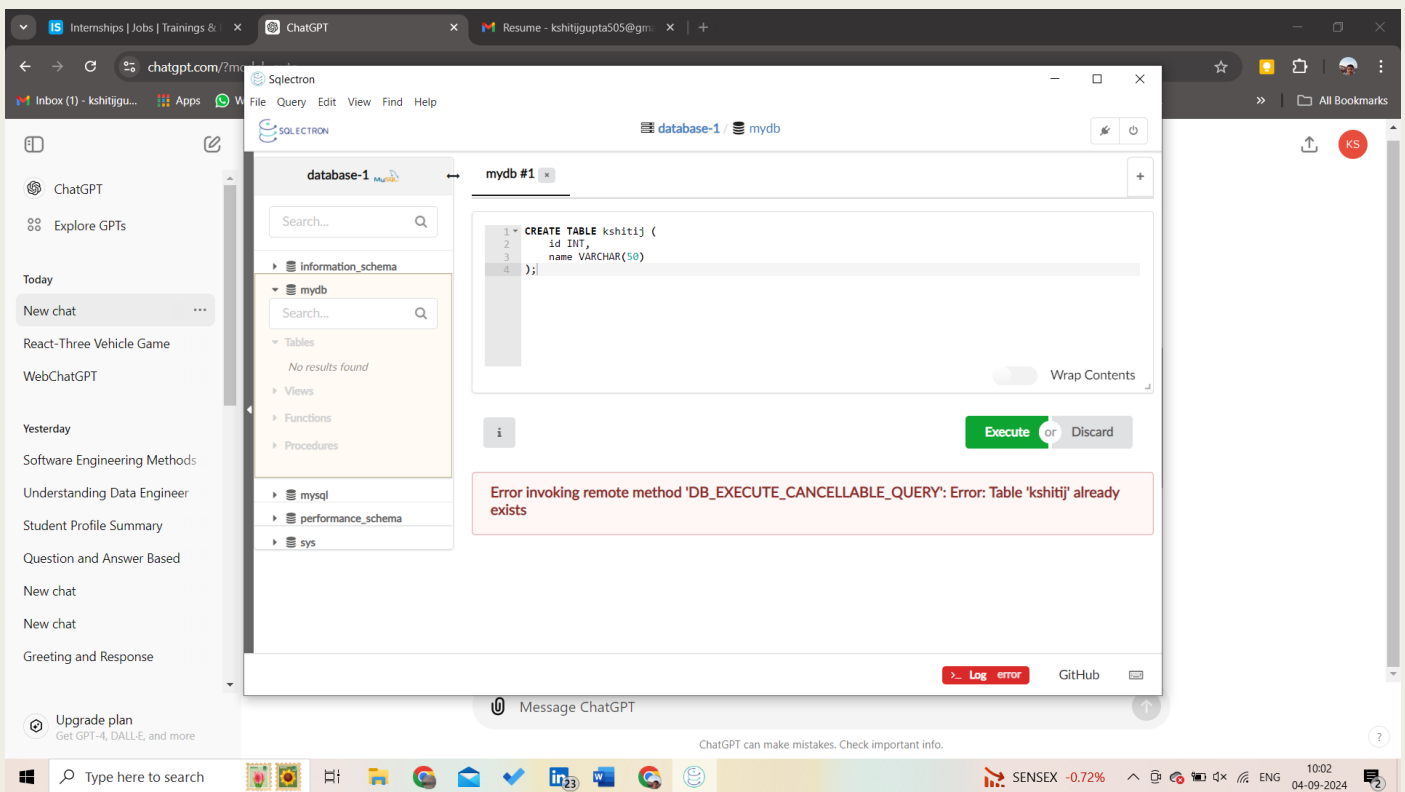
The left sidebar contains navigation links for various AWS RDS features, including Dashboard, Databases, Query Editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations, Events, and Event subscriptions. The bottom of the screen shows the Windows taskbar with various application icons and system tray information, including the date and time (04-09-2024, 09:56).

Now go to SQLelectron to Connect AWS RDS to perform Queries





Now perform Create Table Queries



Now insert values into table

The screenshot shows the ChatGPT web interface with a browser window open to chatgpt.com. A sidebar on the left lists various chat sessions. The main area displays a conversation with a user asking to insert values into a table. The AI response is a SQL query: `insert into kshitiij values(1, 'kshitiij'),(2, 'ram');`. This query is pasted into the Sqliatron tool's editor. The tool's interface shows a database schema on the left with 'mydb' selected, containing a table 'kshitiij'. The query is executed, and a green message box confirms: 'Query executed successfully. Affected rows: 2.' The Sqliatron tool also has buttons for 'Execute', 'Discard', and 'Log error'.

Now show data that we where inserted

The screenshot shows the ChatGPT web interface with a browser window open to chatgpt.com. A sidebar on the left lists various chat sessions. The main area displays a conversation with a user asking to show the data that was inserted. The AI response is a SQL query: `select * from kshitiij`. This query is pasted into the Sqliatron tool's editor. The tool's interface shows a database schema on the left with 'mydb' selected, containing a table 'kshitiij' with columns 'id' (INT) and 'name' (VARCHAR). The query is executed, and the results are displayed in a table with 2 rows:

| id | name |
|----|----------|
| 1 | kshitiij |
| 2 | ram |

The Sqliatron tool also has buttons for 'Execute', 'Discard', and 'Log error'.