



Worksheet 9

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Semester: 5th
Subject Name: ADBMS

UID: 23BCS10864
Section/Group: KRG 1-B
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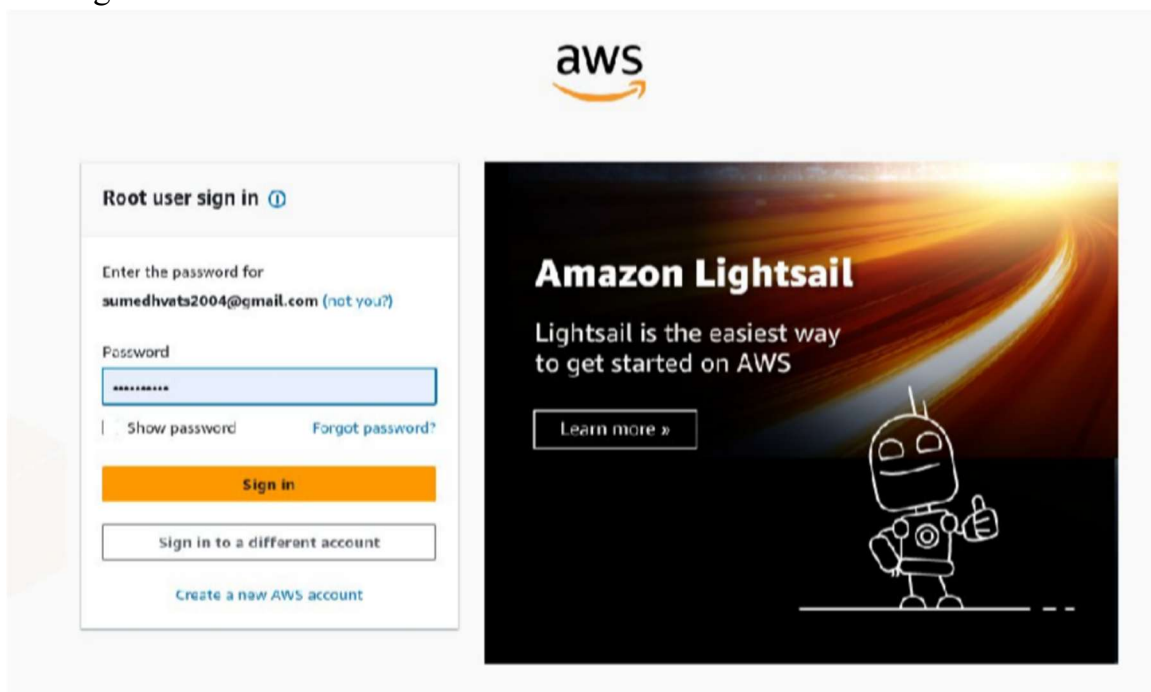
1. Aim: To understand and implement the setup of Amazon Relational Database Service (AWS RDS) by creating a database instance, configuring security groups, and establishing a secure connection between the local pgAdmin tool and the RDS instance hosted on the AWS Cloud.

2. Objective:

- To learn the basic concepts and features of Amazon Relational Database Service (AWS RDS).
- To create and configure a new RDS database instance on the AWS Management Console.
- To understand the role and configuration of security groups for controlling database access.
- To connect a local pgAdmin client to the AWS RDS instance securely using proper credentials and endpoint details.
- To verify successful database connectivity and perform basic operations through pgAdmin.

3. Code & Output:

1. Sign-in

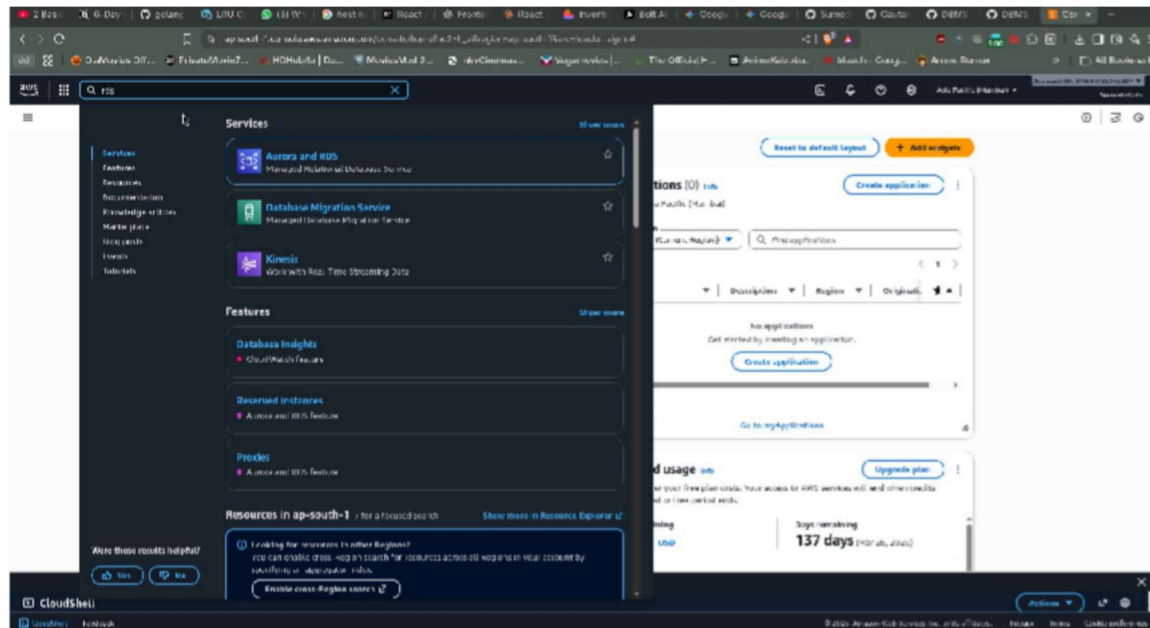




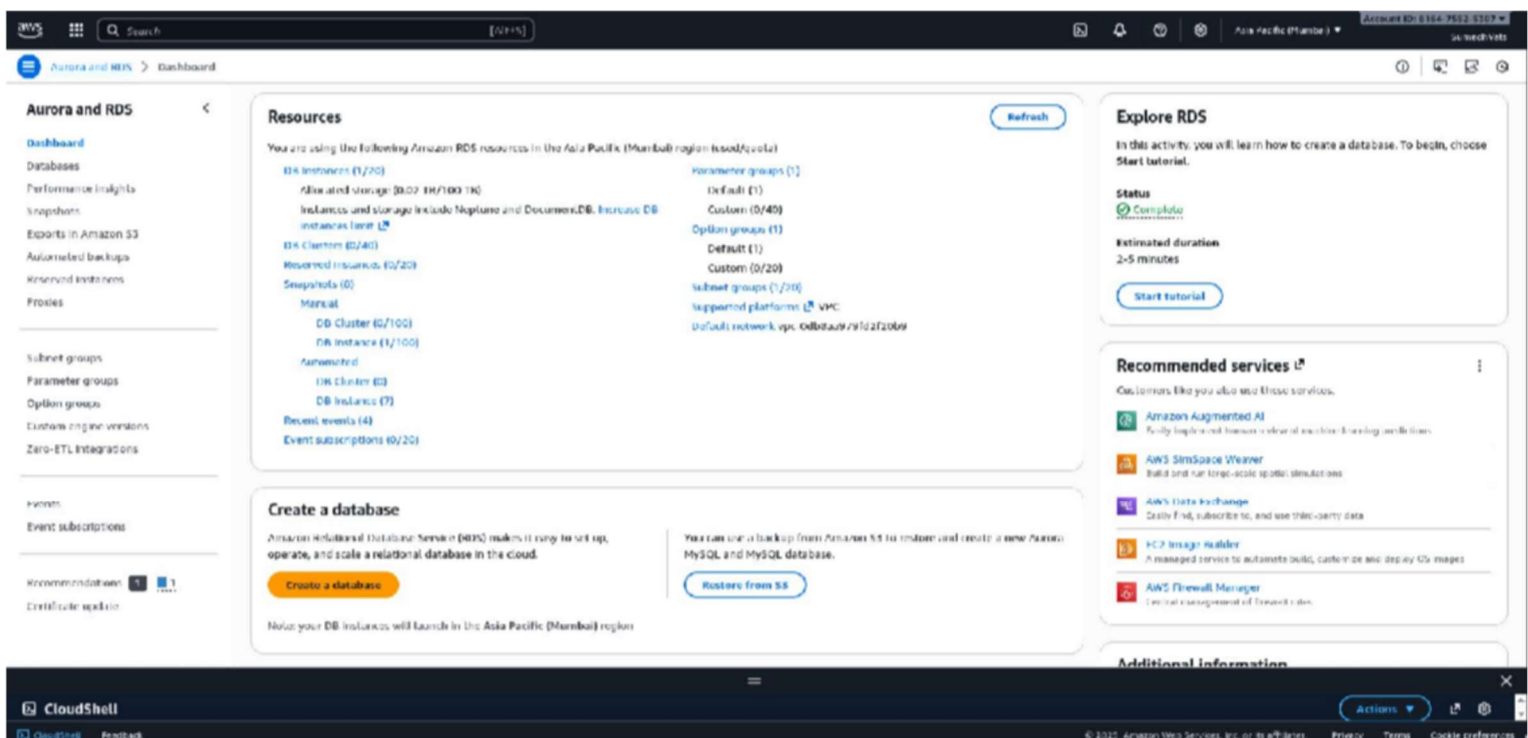
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2. Navigating to RDS Service

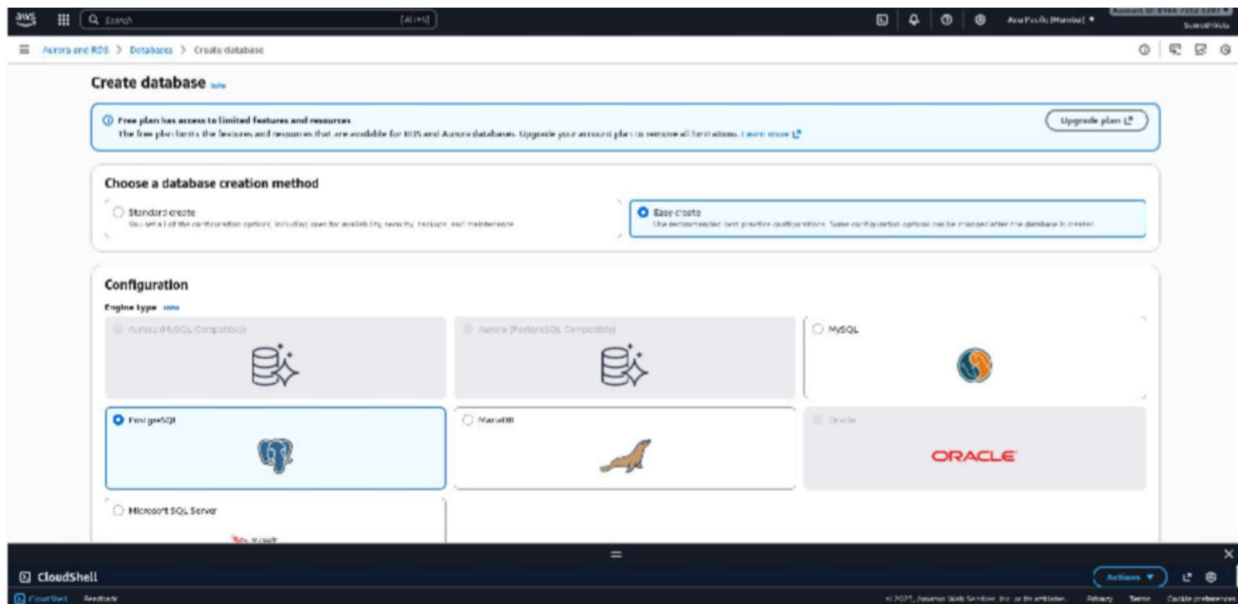


3. Amazon RDS Dashboard Overview

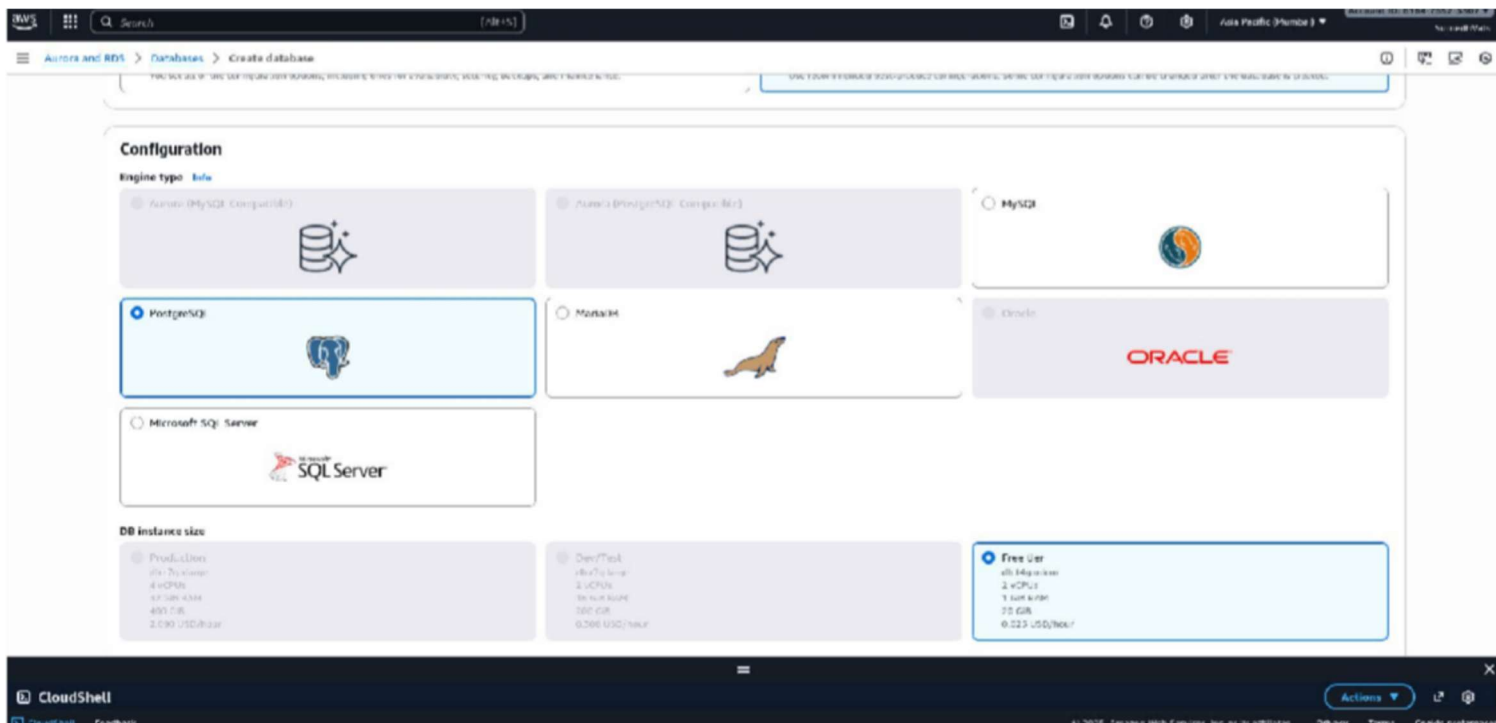




4. Creating a New Database Instance

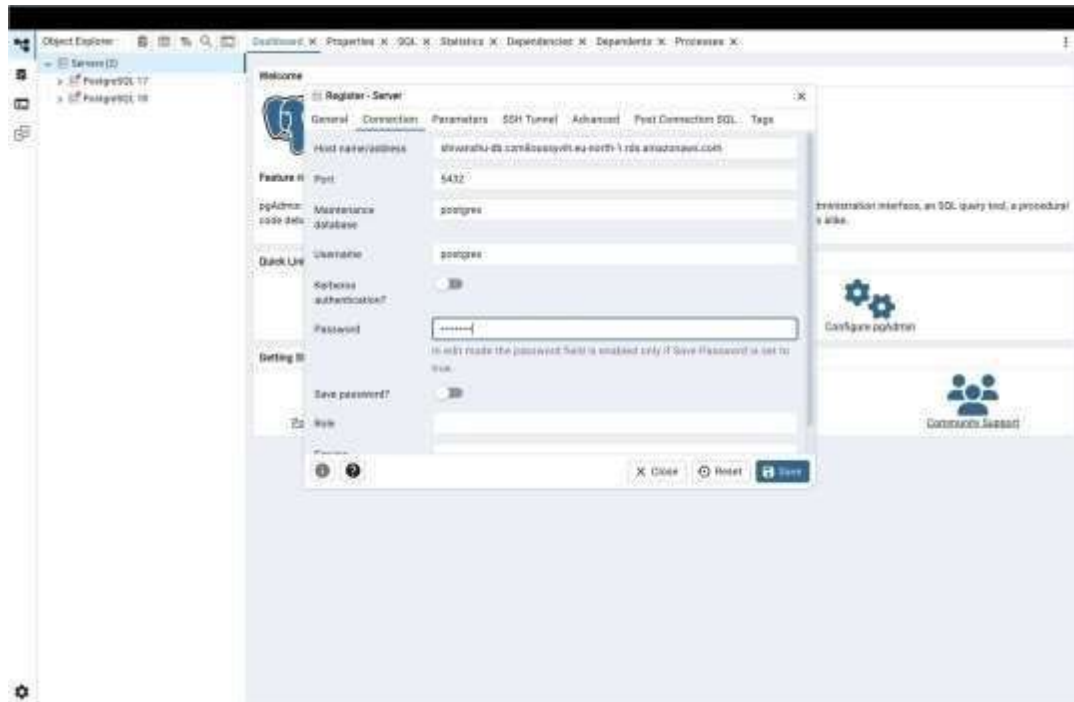


5. Selecting PostgreSQL as Database Engine

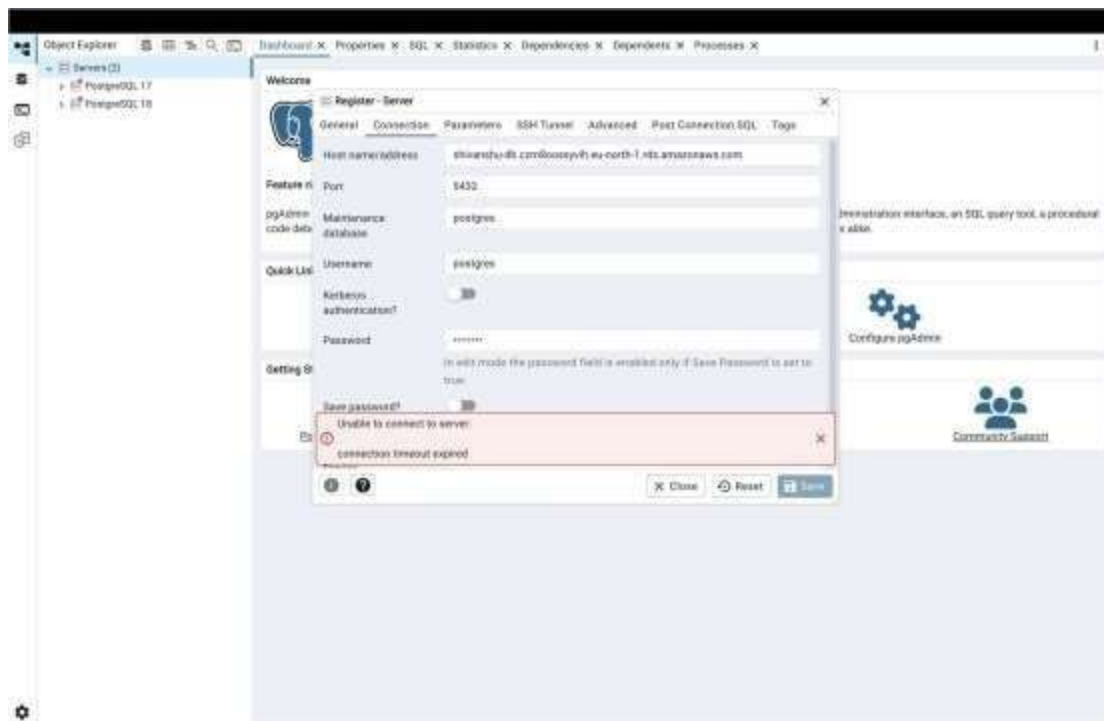


The screenshot shows the AWS Management Console interface for the 'Databases (1)' section. The left sidebar contains the 'Aurora and RDS' navigation menu with options like Dashboard, Databases, Performance insights, Snapshots, Export to Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL migrations, Events, Event subscriptions, Recommendations, and Certificate update. The main content area displays a table of database instances. The table has columns for DB identifier, Status, Role, Engine, Region, Size, Recommendations, CPU, Current activity, and Maintenance. A single instance, 'database-1', is listed with a status of 'Available', role of 'Instance', engine of 'PostgreSQL', region of 'ap-south-1', and size of 'db.t4g.micro'. The CPU usage is 1.67%, and the current activity is 'idle'. The maintenance information is 'none'. The top of the console shows the AWS logo, search bar, and user profile information.

10. Gr Setting Up Security Groups for RDS Access



11. Additional Database Configuration Options





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12. Reviewing and Creating the Database Instance

The screenshot displays the AWS Management Console interface for an Amazon RDS database instance. The left sidebar shows navigation options like 'Aurora and RDS', 'Database', 'Subnet groups', 'Parameter groups', and 'Custom engine versions'. The main content area is titled 'database-1' and includes a 'Summary' section with details such as DB identifier, status (Available), class, engine (MySQL), and region (us-east-1). Below the summary, there are tabs for 'Connectivity & security', 'Monitoring', 'Logs & events', 'Configuration', 'Zero-ETL integrations', 'Maintenance & backups', 'Data migrations', 'Tags', and 'Recommendations'. The 'Connectivity & security' tab is active, showing 'Endpoint & port', 'Networking', and 'Security' sections. The 'Endpoint & port' section shows the endpoint URL and port (5432). The 'Networking' section shows the VPC, subnet group, and subnets. The 'Security' section shows the VPC security groups, public accessibility, and certificate authority details.

13. RDS Instance Creation in Progress

The screenshot shows the 'Edit inbound rules' configuration page for an Amazon RDS instance. The page title is 'Edit inbound rules' and it includes a warning message: 'Inbound rules control the incoming traffic that's allowed to reach the instance. We recommend using security group rules to allow access from known IP addresses only.' The configuration table shows two inbound rules for the security group 'sg-03b0f9d9'. Both rules are for 'All traffic' on port 'All' from 'All' sources. The first rule has a source of '0.0.0.0/0' and the second rule has a source of '10.0.0.0/16'. The 'Add rule' button is visible at the bottom left of the table. At the bottom of the page, there are buttons for 'Cancel', 'Preview changes', and 'Save rules'.



14. Viewing Database Instance Details

▼ Additional configuration

Public access

☒ **Publicly accessible**
RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.

☐ **Not publicly accessible**
No IP address is assigned to the DB instance. EC2 instances and devices outside the VPC can't connect.

Database port
Specify the TCP/IP port that the DB instance will use for application connections. The application connection string must specify the port number. The DB security group and your firewall must allow connections to the port. [Learn more](#)

5432

15. Copying the RDS Endpoint for Connection

Connectivity & security | Monitoring | Logs & events | Configuration | Zero-ETL integrations | Maintenance & backups | Data migrations | Tags | Recommendations

Connectivity & security

Endpoint & port

Endpoint
database-1.czalogg22pwe.co-south-1.rds.amazonaws.com

Port
5432

Networking

Availability Zone
ap-south-1a

VPC
vpc-0db5a979fc2f2c09

Subnet group
default-vpc-0db5a979fc2f2c09

Subnets
subnet-0573e5d45e47fb04f
subnet-023645775b0c3b02f
subnet-00cce0a66f1c6e78d

Network type
IPv4

Security

VPC security groups
default (sg-03c3b3fb496219655)
Active

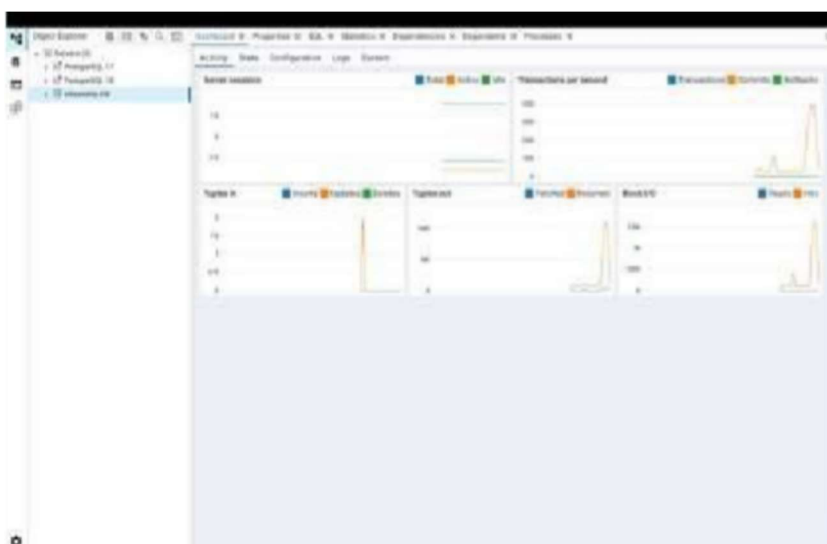
Publicly accessible
No

Certificate authority [info](#)
rds-ca-rsa2048-g1

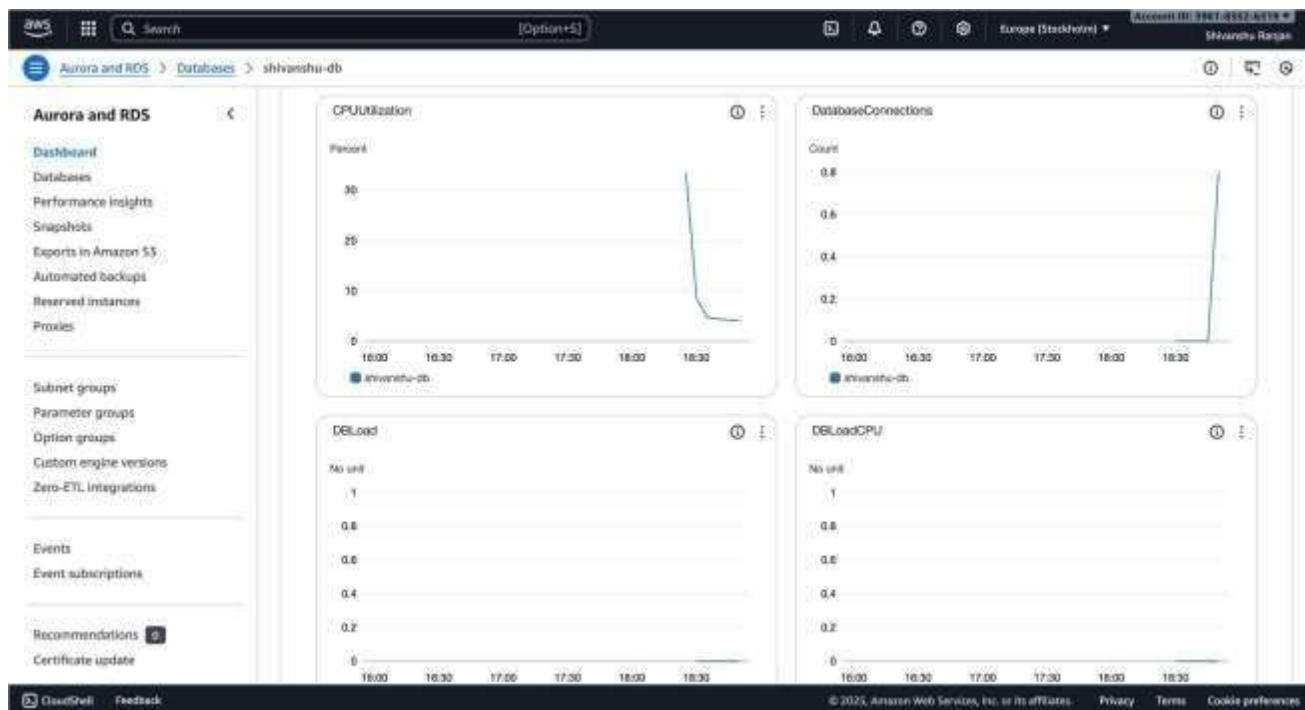
Certificate authority date
May 20, 2021, 00:10 (UTC+05:30)

DB instance certificate expiration date
November 04, 2026, 09:43 (UTC+05:30)

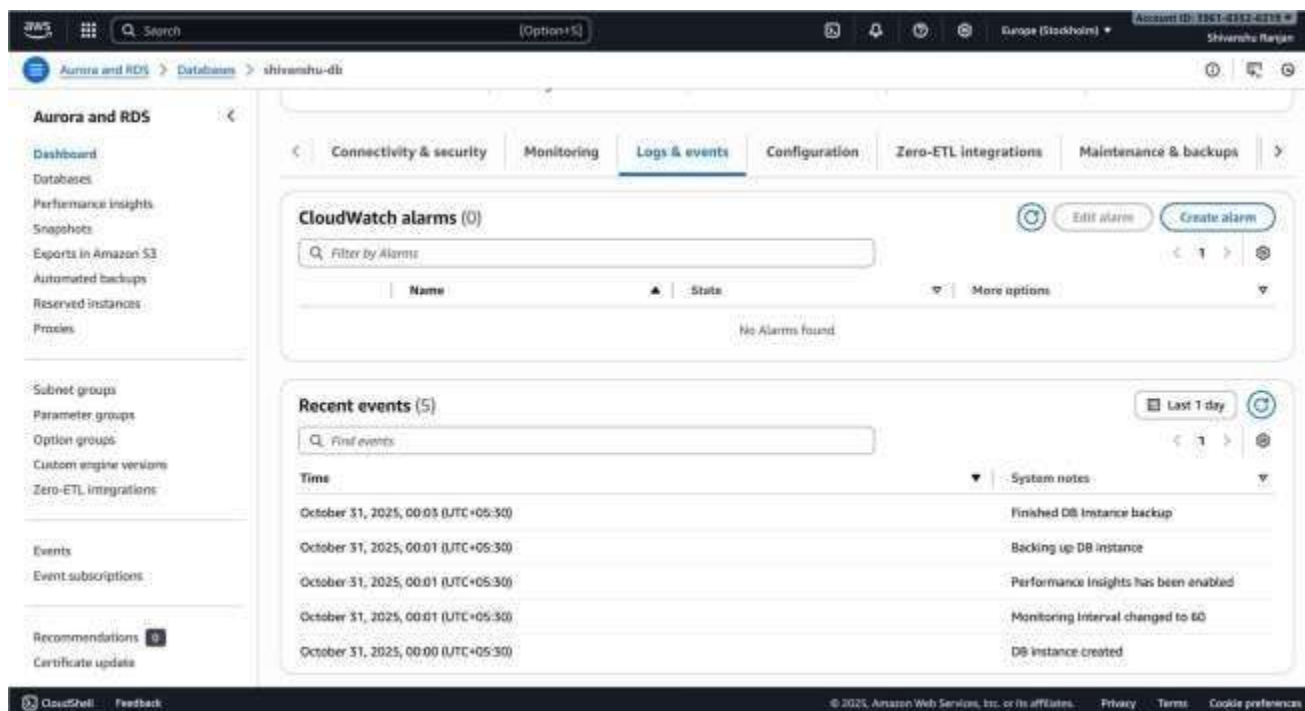
16. Launching pgAdmin on Local Machine



17. Adding a New Server in pgAdmin



18. Entering Connection Details (Endpoint, Username, Password)





19. Successful Connection to AWS RDS Database via pgAdmin

Name	Last written	Size
aws/psqlrds-log-2025-11-07-16	November 08, 2025, 09:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-07-19	November 08, 2025, 07:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-07-20	November 08, 2025, 07:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-07-21	November 08, 2025, 07:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-07-22	November 08, 2025, 04:25 (UTC+05:30)	4.3 KB
aws/psqlrds-log-2025-11-07-23	November 08, 2025, 05:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-06-00	November 08, 2025, 06:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-06-01	November 08, 2025, 07:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-06-02	November 08, 2025, 08:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-06-03	November 08, 2025, 09:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-06-04	November 08, 2025, 10:25 (UTC+05:30)	4.5 KB
aws/psqlrds-log-2025-11-06-05	November 08, 2025, 11:25 (UTC+05:30)	4.4 KB
aws/psqlrds-log-2025-11-06-06	November 08, 2025, 12:25 (UTC+05:30)	4.4 KB

4. Learning Outcomes:

- Understand the fundamental concepts and benefits of using Amazon RDS for relational database management in the cloud.
- Gain practical knowledge of creating and configuring an RDS database instance on AWS.
- Learn how to manage and secure database access using AWS security groups.
- Develop skills to connect a local pgAdmin client to a cloud-hosted RDS instance.
- Be able to monitor, manage, and test database connectivity and performance in a cloud environment.