

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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EXPERIMENT - 09

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Branch: BE-CSE

Semester: 5th

Subject Name: ADBMS

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Subject Code: 23CSP-333

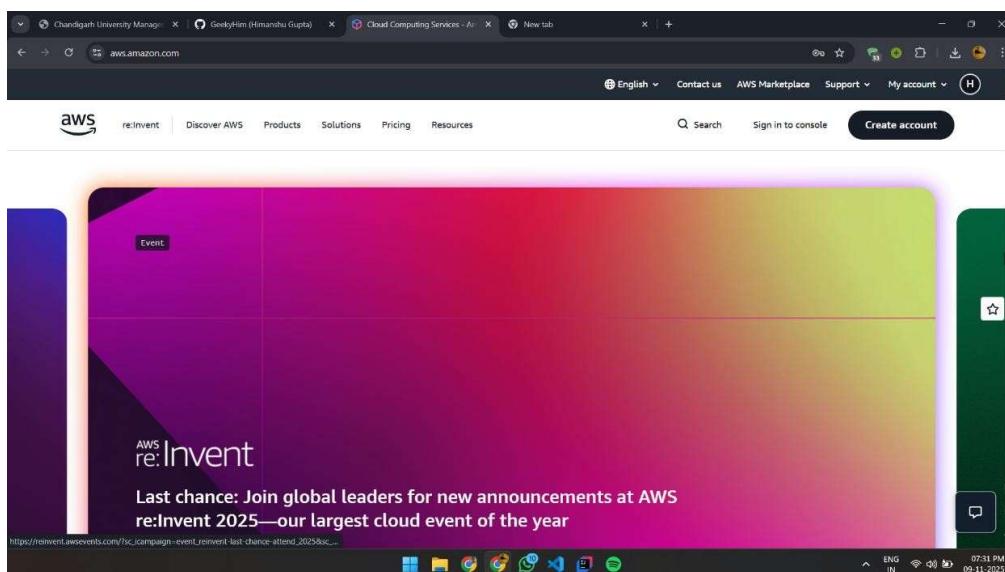
1. Aim

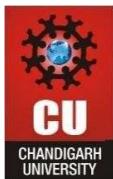
To create, configure, and connect an Amazon RDS PostgreSQL database instance on AWS, and verify successful database operations using a client tool.

2. Objective:

- a. To understand the concept of managed relational database services in AWS (Amazon RDS).
- b. To create a PostgreSQL database instance using AWS RDS.
- c. To configure DB parameters such as instance size, storage, authentication and security groups.
- d. To connect the RDS instance from a PostgreSQL client (pgAdmin/psql).
- e. To execute basic SQL queries to validate connectivity and database functionality.

3. AWS RDS Operations and Output:

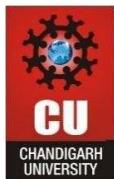




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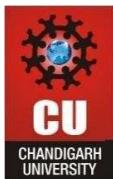
The image shows two screenshots of the AWS Management Console. The top screenshot is from the 'Aurora and RDS' service, specifically the 'Databases' section. A modal window titled 'Creating database uid23bcs10889' is open, indicating the database is in the 'Creating' status. The table below shows one row: 'uid23bcs10889' (Status: Creating, Engine: PostgreSQL, Region: Europe (Stockholm), Size: db.t4g.micro). The left sidebar lists various Aurora and RDS management options like Dashboard, Databases, and Subnet groups. The bottom screenshot is from the 'Console Home' service, showing a dashboard with sections for Recently visited services (No recently visited services), Applications (0), Welcome to AWS (Getting started with AWS Health), and Cost and usage. The AWS navigation bar at the top includes links for CloudShell, Feedback, and search, along with account information (Account ID: 6501-2221-2114, Region: Europe (Stockholm), and user name: Himanshu).



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The screenshot shows two browser windows side-by-side. The top window displays the AWS RDS console search results for 'rds'. It lists services like Aurora and RDS, Database Migration Service, and Kinesis. The bottom window shows the 'Create database' wizard for Aurora and RDS, specifically for launching a new database instance. It includes sections for choosing a creation method (Standard create vs. Easy create), selecting an engine type (PostgreSQL, Aurora MySQL Compatible, MariaDB, MySQL, Oracle), and configuration options. Both windows are from the AWS Management Console, with the top one showing a sidebar with various AWS services and the bottom one showing a breadcrumb trail for 'Create database | Aurora and RDS'.



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The screenshot shows two overlapping browser windows. The top window is the 'Create database' page in the AWS Aurora and RDS service. It displays three DB instance size options: Production (db.t7g.xlarge), Dev/Test (db.t7g.large), and Free tier (db.t4g.micro). The Free tier option is selected. Below this, the 'DB instance identifier' field contains 'uid23bcs10889'. The 'Master username' field is set to 'postgres'. Under 'Credentials management', the 'Self managed' option is selected. The bottom window is a pgAdmin 4 terminal showing PostgreSQL commands being run:

```
-- TABLE DESCRIPTION
SELECT table_schema, table_name
FROM information_schema.tables
WHERE table_type = 'BASE TABLE'
    AND table_schema NOT IN ('pg_catalog', 'information_schema')

-- SLEEP
select * from users;
select * from user_roles;

DELETE FROM properties;
DELETE FROM property_image_urls;
```

A warning message in the pgAdmin 4 terminal states: "You are currently running version 9.8 of pgAdmin 4, however the current version is 9.9. Please click here for more information."



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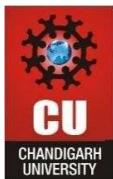
The screenshot shows two windows side-by-side. On the left is the pgAdmin 4 interface, specifically the 'Register - Server' dialog. It displays connection details for a PostgreSQL database:

- Host name/address: uid23bcs10889.crwecy6mia9y.eu-north-1.rds.amazonaws.com
- Port: 5432
- Maintenance database: postgres
- Username: postgres
- Kerberos authentication?: Off
- Password: (redacted)
- Save password?: Off
- Role: (empty)

A message at the bottom of the dialog says: "In edit mode the password field is enabled only if Save Password is set to true." Below the dialog, the pgAdmin interface shows a 'Servers' tree and a status bar indicating "Total rows: 0" and "CRLF | Ln 1, Col 1".

On the right is a browser-based AWS CloudShell session titled "uid23bcs10889 - Database Details". It shows a database creation progress bar: "Wait for creating your DB for you." Below it, there's a table with columns "Name", "Region ...", and "Size". One row is visible: "postgres" (Region: eu-north-1b, Size: db.t4g.micro). At the top of the CloudShell window, the account ID is listed as "Account ID: 6501-2221-2114".

Below the CloudShell window, another pgAdmin 4 instance is shown, identical to the one on the left, with the same connection configuration dialog open. This second pgAdmin window also has a message at the bottom: "Unable to connect to server: connection timeout expired".



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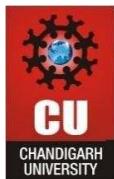
The screenshot shows the AWS Aurora and RDS console. A green success message at the top states: "Successfully created database uid23bcs10889. You can use settings from uid23bcs10889 to simplify configuration of suggested database add-ons while we finish creating your DB for you." On the left sidebar, under the "Databases" section, there is a list of options: 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 main content area displays a table titled "Databases (1)". The table has columns: DB identifier, Status, Role, Engine, Region ..., and Size. One row is shown: uid23bcs10889, Config..., Instance, PostgreSQL, eu-north-1b, db.t4g.micro. At the bottom right of the table, there are buttons for "Group resources", "Modify", "Actions", and "Create database".

The screenshot shows the AWS EC2 Security Groups console. It is navigating through the path: EC2 > Security Groups > sg-0b0343bd52e1b5ef9 - default > Edit inbound rules. The main area is titled "Edit inbound rules" and contains a table for managing security group rules. The table has columns: Security group rule ID, Type, Protocol, Port range, Source, and Description - optional. There are two rows listed:

- sgr-0c71c0ff17c759e4f: Type: All traffic, Protocol: All, Port range: All, Source: Custom, Description: sg-0b0343bd52e1b5ef9.
- : Type: PostgreSQL, Protocol: TCP, Port range: 5432, Source: My IP, Description: 49.43.92.27/32.

At the bottom of the table, there are buttons for "Add rule", "Cancel", "Preview changes", and "Save rules".

The screenshot shows the AWS CloudShell interface, which is a terminal window within the browser. It displays a command-line prompt and various AWS service icons at the top. The status bar at the bottom indicates the user is in the Europe (Stockholm) region, connected via ENG IN, and the current time is 07:53 PM on 09-11-2025.



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The screenshot shows two consecutive screenshots of the AWS Aurora and RDS console.

Screenshot 1: Databases Overview

The top screenshot displays the "Databases" page under the "Aurora and RDS" section. A success message at the top states "Successfully modified uid23bcs10889." The main table lists one database entry:

DB identifier	Status	Role	Engine	Region ...	Size
uid23bcs10889	Available	Instance	PostgreSQL	eu-north-1b	db.t4g.micro

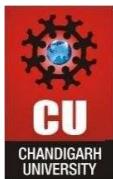
Screenshot 2: Database Details

The bottom screenshot shows the detailed view for the database "uid23bcs10889". The "Summary" tab is selected, displaying basic information:

DB identifier	Status	Role	Engine	Recommendations
uid23bcs10889	Modifying	Instance	PostgreSQL	
CPU	Class	Current activity	Region & AZ	
-	db.t4g.micro		eu-north-1b	

The "Connectivity & security" tab is active, showing network configuration details:

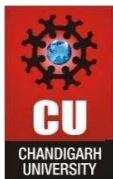
Endpoint	Networking	Security
uid23bcs10889.crwecy6mia9y.eu-north-1.rds.amazonaws.com	Availability Zone: eu-north-1b	VPC security groups: default (sg-0b0343bd52e1b5ef9) (Active)
Port: 5432	VPC: vpc-03d3e52747890f8db	Publicly accessible: Yes
	Subnet group: default-vpc-03d3e52747890f8db	Certificate authority: rds-ca-rsa2048-g1



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The screenshot shows the AWS RDS console interface. A modal dialog box titled "Delete uid23bcs10889 instance" is open, prompting the user to permanently delete the database instance. It includes options for creating a final snapshot or retaining automated backups, and a checkbox for acknowledging that automated backups will no longer be available after deletion. A text input field requires the user to type "delete me" to confirm the action. Below the dialog, the main RDS dashboard shows the deleted instance "uid23bcs10889" with a status of "Deleting". The instance details are listed as PostgreSQL, eu-north-1b, db.t4g.micro.



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The screenshot shows the AWS Billing and Cost Management console for an account named 'Himanshu'. The account ID is 650122212114. The service provider is Amazon Web Services India Private Limited, and the ARN is arn:aws:account:650122212114:account. The account display settings show an 'Unset' color. The contact information section includes the full name 'Himanshu Gupta', company name 'None', address '#2418, Street no 7 Kishore Nagar Near Tajpur Road Ludhiana, Punjab 141008 IN', and a phone number. The left sidebar shows navigation links for Home, Getting Started, Dashboards, Billing and Payments, Bills, Payments, Credits, Purchase Orders, Cost Explorer, Cost Explorer Saved Reports, and Cost Anomaly Detection. The bottom of the screen shows standard Windows taskbar icons and system status.