



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment - 9

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Subject Name: Advanced Database and Management System

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. Objectives:

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

3. AWS RDS OPERATIONS AND OUTPUTS -

The screenshot shows the AWS RDS Databases console. On the left, there's a sidebar with links like Aurora and RDS, Dashboard, Databases, Performance Insights, Snapshots, Exports to Amazon S3, Automated Backups, Reserved Instances, Profiles, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations, Events, Event subscriptions, Recomendations, and Certificate updates. The main area is titled 'Databases (1)' and shows a table with one row. The table columns are DB Identifier, Status, Role, Engine, Region, and Size. The row contains 'database-1', 'Creating', 'Instance', PostgreSQL, eu-north-1c, and db.t3.micro. There are buttons for Group resources, Modify, Actions, and Create database at the top right of the table area.

Screenshot of the AWS Aurora and RDS console showing the Databases page.

The left sidebar shows the following navigation:

- Aurora and RDS
- Dashboard
- Databases** (selected)
- Performance insights
- Metrics
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Profiles

The main content area displays a table of databases:

DB identifier	Status	Role	Engine	Region	Size
database-1	Available	Instance	PostgreSQL	eu-north-1c	db.t4g.msm

Below the table, there are sections for Subnet groups, Parameter groups, Option groups, Custom engine versions, and Zero-ETL integrations.

At the bottom, there are links for Events and Event subscriptions, and a Recommendations section.

Screenshot of the AWS EC2 Security Groups page showing the "Edit inbound rules" section.

The top navigation bar includes links for Dashboard, Feedback, and Console Mobile App.

The main content area shows the "Edit inbound rules" section:

Inbound rules (Info)

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source	Description
sg-0c10a5578be4f114e	PostgreSQL	tcp	5432	Custom	45.248.190.62/32
sg-063fb9f74b466570	All traffic	tcp	443	Custom	45.248.190.62/32

Buttons at the bottom include Add rule, Cancel, Preview changes, and Save.

Create

Firewall security group: [Info](#)
A security group is a set of Network rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Customer security groups: [Info](#)
Select security groups:

Configure storage: [Info](#)
Advanced
Root volume: 30 GiB, gp3, Root volume, 3000 IOPS, Not encrypted.

The selected AMI contains instance store volumes, however the instance does not allow any instance store volumes. None of the instance store volumes from the AMI will be accessible from the instance.

Click [here](#) to view backup information
The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

File systems:

Software image (AMI): Microsoft Windows Server 2025 - [read more](#)
ami-0091c6995f10ddcc
Virtual server type (instance type): t3.micro
Firewall security group: default
Storage (Volume): 1 volume(s) - 30 GiB

[Cancel](#) [Create instance](#)

Aurora and RDS < **database-1**

Summary

DB identifier:	Status	Role	Engine	Recommendations
database-1	Available	Instance	PostgreSQL	Region & AZ: us-north-1c
CPU	Class: db.tis4g.micro	Current activity		

Connectivity & security

Endpoint	Networking	Security
database-1.1x2yegqlq77nu.virt-h-1.rds.amazonaws.com	Availability Zone: us-north-1c	VPC security group: default (sg-0091c6995f10ddcc) (Active)
Port: 5432	VPC: vpc-0ff88a32e6f6c42ca	Publicly accessible: No
	Select group: default-vpc-0ff88a32e6f6c42ca	Certificate authority: Info rds-ca-rsa2048-q1
	Subnets: subnet-03382978271639 subnet-070a201133633f	Certificate authority date: May 25, 2021, 01:29 (UTC+06:30)

[Dashboard](#) [Feedback](#) [Console Help](#) [App](#)

Create database

Choose a database creation method

Standard create: You get all of the configuration options, including user availability, security, backups, and more.

Easy create: Use recommended best practice configurations. Some configuration options can't be changed after the database is created.

Configuration

Engine type: [MySQL](#)

Amazon MySQL Database	Amazon MySQL Engine	MySQL
<input checked="" type="checkbox"/> PostgreSQL	<input type="checkbox"/> MariaDB	<input type="checkbox"/> Oracle

[Dashboard](#) [Feedback](#) [Console Help](#) [App](#)

Publicly accessible	No	Yes
Database port	5432	Yes
DB instance identifier	database-1	Yes
DB engine version	17.6	Yes
DB parameter group	default.postgres17	Yes

Database Insights -

Aurora and RDS > Databases > database-1

Connectivity & security

Endpoint	Networking	Security
database-1.c2qpgqlqen7.eu-north-1.rds.amazonaws.com	VPC: vpc-09962e2d8fb74d8a Subnet group: default-vpc-09962e2d8fb74d8a Subnets: subnet-03a1234567890123, subnet-0f6bb221a2333f, subnet-0f27fbae33a29645	VPC security groups: default (sg-0000445519b0444) (Active) Publicly accessible: No Certificate authority: idb-ca-rsa2048-g1 Certificate authority date: May 25, 2021, 03:20 (UTC+05:30) DB instance certificate expiration date: November 09, 2021, 17:38 (UTC+05:30)
Port: 5432	Network type: IPv4	

Connected compute resources: 0/0

Sign In

File Edit View Insert Database x Dependencies x Dependents x Processes x Preferences x

Register - Server

General Connection Parameters BSM Tunnel Advanced Post Connection SQL Tags

Port: 5432 Maintenance database: postgres Username: postgres

PostgreSQL authentication? Password: Save password?

Note: Unable to connect to server. connection timeout expired.

Display Miscellaneous File Downloads User Interface

Save password? Connect? Show template database?

Unavailable to connect to server.

EC2 Instances

Instances (1) [View details](#)

Last updated 1 min ago

Connect Instance state Actions Launch instances

All states

Name Instance ID Instance state Instance type Status check Alarm status Availability Zone Public (IPv4 IP)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public (IPv4 IP)
myserver	i-0065d03efc7f4e6	Running	t2.micro	Not checked	No alarms	eu-north-1a	ec2-51-20-18:

Select an instance

Actions

EC2 Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservation Capacity Manager

Images AMIs AMI Catalog

Elastic Block Store Volumes Snapshots Lifecycle Manager