



# DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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## Experiment -9

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**Branch:** BE-CSE

**Section/Group:** KRG\_2B

**Semester:** 5<sup>th</sup>

**Date of Performance:** 27/10/25

**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 (Relational Database Service) interface. On the left, there's a sidebar with navigation links for Aurora and RDS, including 'Dashboard', 'Databases', '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', 'Event subscriptions', 'Recommendations (0)', and 'Certificate update'. The main content area is titled 'Databases (1)' and displays a table with one row. The table columns are 'DB identifier', 'Status', 'Role', 'Engine', 'Region ...', and 'Size'. The row shows 'database-1' with status 'Creating', role 'Instance', engine 'PostgreSQL', region 'eu-north-1c', and size 'db.t4g.micro'. There are also 'Group resources', 'Modify', 'Actions', and 'Create database' buttons at the top of the table.

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Aurora and RDS > Databases

Databases (1)

Filter by databases

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

Group resources Actions

Dashboard  
Databases  
Performance insights  
Schemas  
Exports in Amazon S3  
Automated backups  
Reserved instances  
Proxies  
  
Subnet groups  
Parameter groups  
Option groups  
Custom engine versions  
Zero-ETL integrations  
  
Events  
Event subscriptions  
  
Recommendations 0  
Certificate update

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EC2 > Security Groups > sg-0b93c6695518cd4cc - default > Edit inbound rules

### Edit inbound rules

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

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0c10a5678be41146e	PostgreSQL	TCP	5432	Custom  Q 45.248.160.62/32	
sgr-063f6bf74b46657f0	All traffic	All	All	Custom  Q sg-0b93c6695518cd4cc	

Add rule Cancel Preview changes Save rules

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AWS CloudWatch Metrics

**EC2 Instances Launch an instance**

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

Create security group  Select existing security group

**Common security groups** [Info](#)  
Select security groups

default sg-0b93c6695518cd4cc X  
VPC: vpc-0d98d3e2dd9e74b9a

Compare security group rules

Security groups that you add or remove here will be added to or removed from all your network interfaces.

**Configure storage** [Info](#)

1x 30  Root volume, 3000 IOPS, Not encrypted

Add new volume

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 refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems

**Summary**

Number of instances: 1

Software Image (AMI): Microsoft Windows Server 2025 ... [read more](#)  
ami-0b0faec60121c8ca

Virtual server type (instance type): t3.micro

Firewall (security group): default

Storage (volumes): 1 volume(s) - 30 GB

**Launch instance** [Preview code](#)

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AWS CloudWatch Metrics

**Aurora and RDS Databases database-1**

**database-1**

**Summary**

DB identifier: database-1	Status: Available	Role: Instance	Engine: PostgreSQL	Recommendations
CPU: -	Class: db.t4g.micro	Current activity:	Region & AZ: eu-north-1c	

**Connectivity & security**

Endpoint & port	Networking	Security
Endpoint: database-1.ct2gocg6qwn7.eu-nort-h-1.rds.amazonaws.com Port: 5432	Availability Zone: eu-north-1c VPC: vpc-0d98d3e2dd9e74b9a Subnet group: default-vpc-0d98d3e2dd9e74b9a Subnets: subnet-03dc929ff7716f9, subnet-0fbbe207fc38553f	VPC security groups: default (sg-0b93c6695518cd4cc) Active: Yes Publicly accessible: No Certificate authority: rds-ca-rsa2048-g1 Certificate authority date: May 25, 2061, 03:29 (UTC+05:30)

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AWS CloudWatch Metrics

**Aurora and RDS Databases Create database**

**Create database** [Info](#)

Standard create: You set all of the configuration options, including ones for availability, security, backups, and maintenance.

Easy create: Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

**Choose a database creation method**

Aurora (MySQL Compatible) 

PostgreSQL 

MariaDB 

MySQL 

Oracle 

**Configuration**

Engine type: [Info](#)

Aurora (MySQL Compatible) 

PostgreSQL 

MariaDB 

MySQL 

Oracle 

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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 -

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Aurora and RDS > Databases > database-1

Connectivity & security Monitoring Logs & events Configuration Zero-ETL integrations Maintenance & backups Data mi >

Connectivity & security		
Endpoint & port	Networking	Security
Endpoint: database-1.ct2gocg6qwn7.eu-nort-h-1.rds.amazonaws.com	Availability Zone: eu-north-1c	VPC security groups: default (sg-0b93c6695518cd4cc) Active
Port: 5432	VPC: vpc-0d98d3e2dd9e74b9a	Publicly accessible: No
	Subnet group: default-vpc-0d98d3e2dd9e74b9a	Certificate authority: rds-ca-rsa2048-g1
	Subnets: subnet-03dc9297f78716f9, subnet-0fbbe207fc38553f, subnet-0f27f6ac656a069d5	Certificate authority date: May 25, 2061, 03:29 (UTC+05:30)
	Network type: IPv4	DB instance certificate expiration date: November 09, 2026, 17:38 (UTC+05:30)

Connected compute resources (0) info Actions ▾

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Statistics X Dependencies X Dependents X Processes X Preferences X Sign In

Register - Server General Connection Parameters SSH Tunnel Advanced Post Connection SQL Tags

Port: 5432 Maintenance database: postgres Username: postgres Kerberos authentication? Password: ..... Save password? Role: Unable to connect to server: connection timeout expired

Display Miscellaneous File Downloads User Interface objects? Show template databases?

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EC2 > Instances

**EC2**

- Dashboard
- AWS Global View
- Events
- Instances**
  - Instances
  - Instance Types
  - Launch Templates
  - Spot Requests
  - Savings Plans
  - Reserved Instances
  - Dedicated Hosts
  - Capacity Reservations
  - Capacity Manager New
- Images**
  - AMIs
  - AMI Catalog
- Elastic Block Store**
  - Volumes
  - Snapshots
  - Lifecycle Manager

**Instances (1) Info**

Last updated less than a minute ago

Connect Instance state Actions Launch instances

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 D
myserver	i-00db5d63e9cd748c6	Running	t3.micro	Initializing	View alarms +	eu-north-1b	ec2-51-20-18:

Select an instance