



# 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 Databases console. On the left, there's a navigation sidebar with options like Aurora and RDS, 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 area is titled 'Databases (1)' and shows a table with one row. The table columns are DB identifier, Status, Role, Engine, Region..., Size, and R. The row contains 'database-1', 'Creating', 'Instance', 'PostgreSQL', 'eu-north-1c', and 'db.t4g.micro'. There are also buttons for Group resources, Modify, Actions, and Create database.

AWS | Search [Alt+S] | Account ID: 1072-4995-1477 | Europe (Stockholm) ▾

Aurora and RDS > Databases

### Databases (1)

Group resources Actions Create database

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

Filter by databases

Dashboard

**Databases**

- Performance insights
- Snapshots
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Proxies

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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	<input type="text"/> 45.248.160.62/32
sgr-063f6bf74b46657f0	All traffic	All	All	Custom	<input type="text"/> sg-0b93c6695518cd4cc

Add rule

Cancel Preview changes Save rules

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AWS CloudFront > 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](#)

Advanced

1x 30 GB gp3 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

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

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AWS CloudFront > Aurora and RDS > Databases > database-1

**database-1**

[Modify](#) [Actions](#)

**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](#) [Monitoring](#) [Logs & events](#) [Configuration](#) [Zero-ETL integrations](#) [Maintenance & backups](#) [Data migration](#)

**Connectivity & security**

<b>Endpoint</b> database-1.ct2gocg6qwn7.eu-north-1.rds.amazonaws.com	<b>Networking</b> Availability Zone eu-north-1c VPC vpc-0d98d3e2dd9e74b9a Subnet group default-vpc-0d98d3e2dd9e74b9a Subnets subnet-03dc929ff78716f9 subnet-0ffbbe207fc38553f	<b>Security</b> VPC security groups default (sg-0b93c6695518cd4cc) Active 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 CloudFront > Aurora and RDS > Databases > Create database

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

Free plan has access to limited features and resources  
The free plan limits the features and resources that are available for RDS and Aurora databases. Upgrade your account plan to remove all limitations. [Learn more](#)

[Upgrade plan](#)

**Choose a database creation method**

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.

**Configuration**

**Engine type** [Info](#)

Aurora (MySQL Compatible) 

Aurora (PostgreSQL Compatible) 

MySQL 

PostgreSQL 

MariaDB 

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 -

AWS Search [Alt+S] Account ID: 1072-4995-1477 ▾ Europe (Stockholm) ▾

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
<b>Endpoint</b> database-1.ct2gocg6qwn7.eu-nort-h-1.rds.amazonaws.com <b>Port</b> 5432	<b>Availability Zone</b> eu-north-1c <b>VPC</b> vpc-0d98d3e2dd9e74b9a <b>Subnet group</b> default-vpc-0d98d3e2dd9e74b9a <b>Subnets</b> subnet-03dc9297f78716f9 subnet-0fbbe207fc38553f subnet-0f27f6ac656a069d5 <b>Network type</b> IPv4	<b>VPC security groups</b> default (sg-0b93c6695518cd4cc) Active <b>Publicly accessible</b> No <b>Certificate authority</b> <a href="#">Info</a> rds-ca-rsa2048-g1 <b>Certificate authority date</b> May 25, 2061, 03:29 (UTC+05:30) <b>DB instance certificate expiration date</b> 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

Show template databases?

Save password?  Unable to connect to server: connection timeout expired

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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 Dl
myserver	i-00db5d63e9cd748c6	Running	t3.micro	Initializing	View alarms +	eu-north-1b	ec2-51-20-18:

Select an instance