



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment - 9

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Branch: BE-CSE

Section/Group: KRG_2B

Semester: 5th

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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 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 for 'database-1'. The columns in the table are DB identifier, Status, Role, Engine, Region..., Size, and a small icon. The 'Status' column shows 'Creating', 'Role' shows 'Instance', 'Engine' shows 'PostgreSQL', 'Region...' shows 'eu-north-1', and 'Size' shows 'db.t4g.micro'.

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

Aurora and RDS > Databases

Databases (1)

Group resources C Modify 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

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 Info

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

Inbound rules Info

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-0c10a5678be41146e	PostgreSQL	TCP	5432	Custom	<input type="text"/> 45.248.160.62/32 <small>X</small>
sgr-063f6bf74b46657f0	All traffic	All	All	Custom	<input type="text"/> sg-0b93c6695518cd4cc <small>X</small>

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

Endpoint database-1.ct2gocg6qwn7.eu-north-1.rds.amazonaws.com	Networking Availability Zone eu-north-1c VPC vpc-0d98d3e2dd9e74b9a Subnet group default-vpc-0d98d3e2dd9e74b9a Subnets subnet-03dc929ff78716f9 subnet-0ffbbe207fc38553f	Security 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
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-03dc9297f78716f9 subnet-0fbbe207fc38553f subnet-0f27f6ac656a069d5 Network type IPv4	VPC security groups default (sg-0b93c6695518cd4cc) Active Publicly accessible No Certificate authority Info rds-ca-rsa2048-g1 Certificate authority date May 25, 2061, 03:29 (UTC+05:30) 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

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](#)

<input type="checkbox"/>	Name 🔗	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 Dl
<input type="checkbox"/>	myserver	i-00db5d63e9cd748c6	Running 🔗 ?	t3.micro	Initializing	View alarms +	eu-north-1b	ec2-51-20-18:

Select an instance