



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

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Semester: 5th
Subject Name: ADBMS

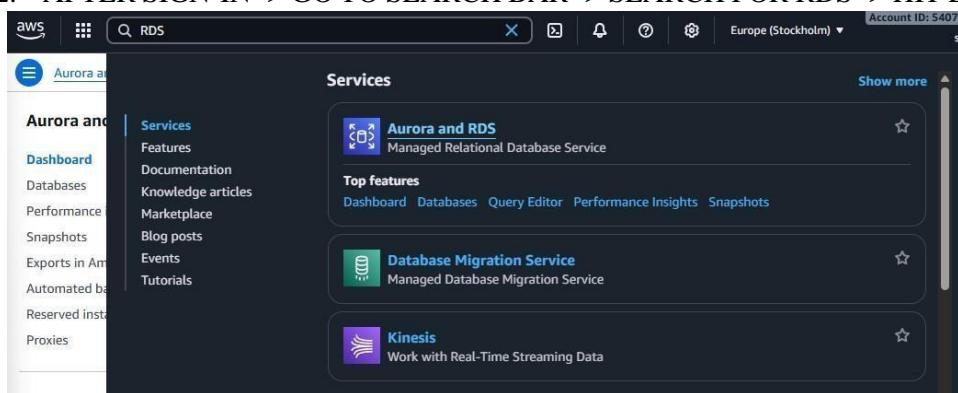
Experiment 9

UID: 23BCS11330
Section/Group: KRG 3_A
Date of Performance: 30/10/2025
Subject Code: 23CSP-333

1. Aim:

AWS RDS

- OVERVIEW OF AWS RDS
 - CREATION OF DATABASE INSTANCE ON AWS RDS
 - SECURITY GROUPS
 - CONNECTING LOCAL PGADMIN TO CLOUD RDS
1. GO TO AWS HOMEPAGE -> CLICK ON SIGN IN-> ENTER USER NAME WITH EMAIL ADDRESS.
 2. AFTER SIGN-IN -> GO TO SEARCH BAR -> SEARCH FOR RDS -> HIT ENTER



3. HOW TO CREATE MY SQL DATABASE INSTANCE ON AWS RDS?



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The screenshot shows the AWS Aurora and RDS Dashboard. On the left, there's a sidebar with links like 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 'Resources' and lists various Amazon RDS resources in the Europe (Stockholm) region. It includes sections for DB Instances (0/40), DB Clusters (0/40), and Snapshots (0). Below this is a 'Create a database' section with a 'Create a database' button and a note about using a backup from Amazon S3 to restore and create a new Aurora MySQL or MySQL database. A note at the bottom says 'Note: your DB instances will launch in the Europe (Stockholm) region'.

4. CLICK ON CREATE DATABASE

The screenshot shows the 'Create database' wizard. At the top, there's a note about a free plan having limited features and resources, with a link to learn more and an 'Upgrade plan' button. Below this is a 'Choose a database creation method' section with two options: 'Standard create' (selected) and 'Easy create'. The 'Standard create' option allows setting all configuration options, including availability, security, backups, and maintenance. The 'Easy create' option uses recommended best-practice configurations, with some options changeable after creation. The next section is 'Configuration' under 'Engine type'. It shows several options: Aurora (MySQL Compatible), Aurora (PostgreSQL Compatible), MySQL (selected), PostgreSQL (selected), MariaDB, Oracle, Microsoft SQL Server, and Microsoft Azure SQL Database. The PostgreSQL and MySQL options are highlighted with blue borders.

5. IN THE STANDALONE CREATE, WE CAN SET EVERYTHING FOR OUR DATABASE, THE INCOMING TRAFFIC, IP ADDRESSES TO BE USED, BACKUP ETC.



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DB instance size

<input type="radio"/> Production
db.r7g.xlarge
4 vCPUs
32 GB RAM
400 GiB
1.946 USD/hour

<input type="radio"/> Dev/Test
db.r7g.large
2 vCPUs
16 GB RAM
200 GiB
0.278 USD/hour

<input checked="" type="radio"/> Free tier
db.t4g.micro
2 vCPUs
1 GiB RAM
20 GiB
0.019 USD/hour

DB instance identifier

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

strugmac-DB

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 63 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Master username

Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. The first character must be a letter.

Credentials management

You can use AWS Secrets Manager or manage your master user credentials.

Managed in AWS Secrets Manager – most secure

RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.

Self managed

Create your own password or have RDS create a password that you manage.

Auto generate password

Amazon RDS can generate a password for you, or you can specify your own password.

Master password

| [Info](#)

Password strength Very strong

Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ` ^ @

Confirm master password

| [Info](#)

▼ View default settings for Easy create

Easy create sets the following configurations to their default values, some of which can be changed later. If you want to change any of these settings now, use Standard create.

Configuration	Value	Editable after database is created
Encryption	Enabled	No
VPC	Default VPC (vpc-081fe9fe127bb8e79)	No
Multi-AZ	No	Yes
Option group	default:mysql-8-0	Yes
Subnet group	Create new DB Subnet Group	Yes
Automatic backups	Enabled	Yes
VPC security group	default	Yes
Publicly accessible	No	Yes
Database port	3306	Yes
DB instance identifier	strugmac-DB	Yes
DB engine version	8.0.42	Yes
DB parameter group	default.mysql8.0	Yes
Monitoring type	Database Insights - Standard	Yes
Performance insights	Not enabled	Yes
Monitoring	Enabled	Yes
Maintenance	Auto minor version upgrade enabled	Yes



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Aurora and RDS > Databases

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- Aurora and RDS
- Dashboard
- Databases
- Performance insights
- Snapshots
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Proxies
- Subnet groups

Creating database strugmac-db

Your database might take a few minutes to launch. You can use settings from strugmac-db to simplify configuration of suggested database add-ons while we finish creating your DB for you.

[View connection details](#) X

Databases (1)

Group resources Modify Actions ▾ Create database ▾

Filter by databases

DB identifier	Status	Role	Engine
strugmac-db	Creating	Instance	MySQL Co...

6. Now this will create a MySQL database to me, and we want to connect to RDS for which we have to launch a server which basically will have MySQL Client installed inside it. For that we have to launch an EC2 instance,
7. Launching an EC2 instance



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AWS CloudWatch Metrics dashboard showing CPU usage over time for multiple instances. The chart displays CPU utilization percentage on the Y-axis (0% to 100%) against time on the X-axis. Multiple blue lines represent different AWS Lambda functions, showing varying levels of activity throughout the day.

AWS All services page. The left sidebar shows navigation links: Console Home, myApplications, and All services. The main content area is titled "All services" and features a "Services by category" section. Under "Compute", EC2 is highlighted. Other services listed include Lightsail, Lambda, Batch, Elastic Beanstalk, Serverless Application Repository, AWS Outposts, EC2 Image Builder, AWS App Runner, AWS SimSpace Weaver, Parallel Computing Service, AWS Global View, Amazon SageMaker AI, Amazon Augmented AI, Amazon CodeGuru, Amazon DevOps Guru, Amazon Comprehend, Amazon Forecast, Amazon Fraud Detector, Amazon Kendra, Amazon Personalize, Amazon Polly, Amazon Rekognition, Amazon Textract, Amazon Transcribe, and Amazon Translate.

AWS EC2 Instances page. The left sidebar shows navigation links: EC2, Dashboard, AWS Global View, Events, Instances (highlighted), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, and AMIs. The main content area is titled "Benefits and features" and includes a section titled "EC2 offers ultimate scalability and control". It lists several benefits: highest level of control, widest variety of server size options, widest availability of operating systems, and global scalability. It also includes a "Find out more about EC2" link, a "Launch a virtual server" section with "Launch instance", "View dashboard", and "Get started walkthroughs" buttons, and an "Additional actions" section with "View running instances" and "Migrate a server" links.

AWS EC2 Instances page. The left sidebar shows navigation links: EC2, Dashboard, AWS Global View, Events, Instances (highlighted), Instance Types, Launch Templates, and Spot Requests. The main content area is titled "Instances Info" and shows a search bar, "All states" dropdown, and a "Launch instances" button. A message indicates "No instances" and "You do not have any instances in this region".



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▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose [Browse more AMIs](#).

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux	macOS	Ubuntu	Windows	Red Hat	SUSE Linux	Debian

[Browse more AMIs](#)
Including AMIs from AWS, Marketplace and the Community

Firewall (security group)

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

Proceed without a key pair (Not recommended) [Default value](#) [Create new key pair](#)

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

▼ Network settings [Info](#)

[Edit](#)

Network [Info](#)
vpc-081fe9fe127bb8e79

Subnet [Info](#)
No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)
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-0e67db7abaff84225 [X](#)
VPC: vpc-081fe9fe127bb8e79

Compare security group rules

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

Other option is that we can connect the Postgres AWS RDS to our local machine.

1. Create AWS RDS database for PostgreSQL 2.

The screenshot shows the pgAdmin 4 application window. The top navigation bar has a dropdown menu with the following options: File, Object, Tools, Edit, View, Window, Help. The 'Server...' option is highlighted with a blue box. Below the menu is a toolbar with various icons. The main workspace is currently empty. At the bottom, there are tabs for Data Output, Messages, and Notifications.

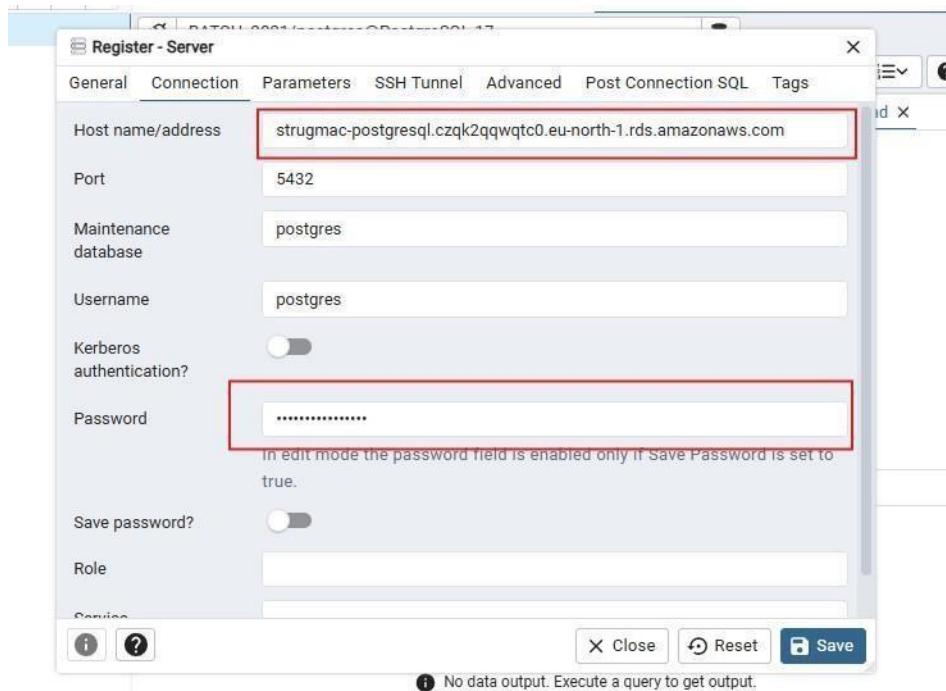
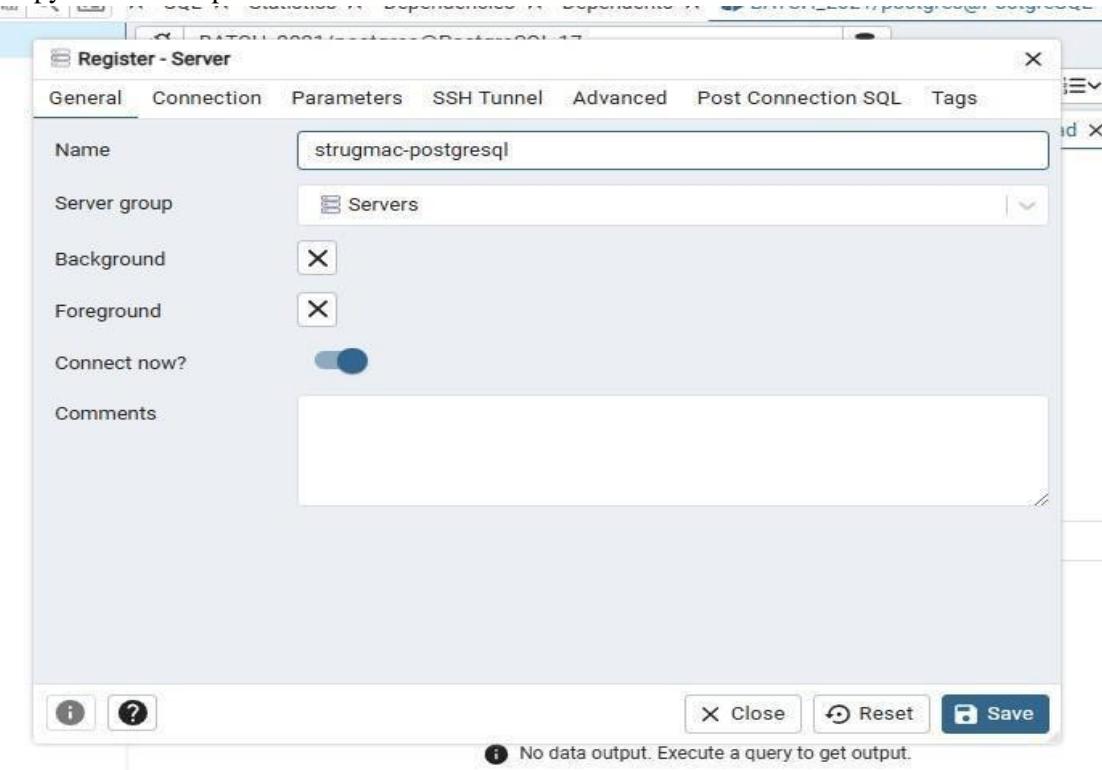


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2. Connect from PgAdmin.

3. Copy the API Endpoints from the dashboard of AWS RDS Database instance.

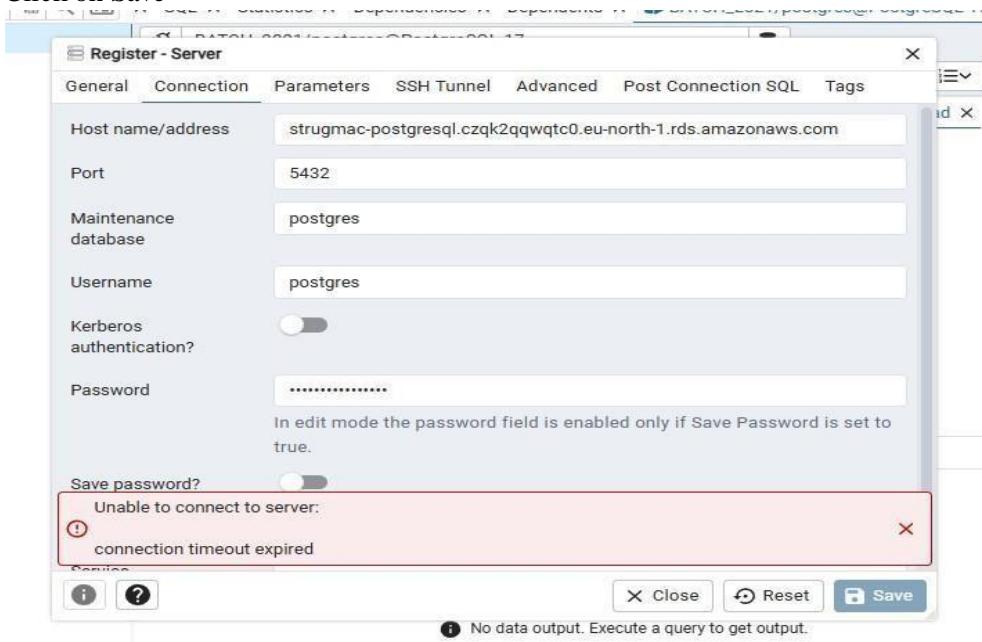




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4. Click on Save



5. Might give this error as this DB instance is not available locally.

6. Change the INBOUND RULES of DB Instance from the AWS Console

Connectivity & security

Endpoint & port	Networking	Security
Endpoint strugmac-postgresql.czqk2qqwqtc0.eu-north-1.rds.amazonaws.com	Availability Zone eu-north-1c	VPC security groups default (sg-0e67db7abaff84225) <input checked="" type="checkbox"/> Active
Port 5432	VPC vpc-081fe9fe127bb8e79	Publicly accessible No
	Subnet group default-vpc-081fe9fe127bb8e79	Certificate authority
	Subnets subnet-00bf0147db6493492 subnet-0aa3f608f07d8cecc subnet-0f9ee2b6eb9698f78	Info rds-ca-rsa2048-g1
		Certificate authority date May 25, 2061, 03:29 (UTC+05:30)

Edit inbound rules

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

Inbound rules	Type	Protocol	Port range	Source	Description - optional
sgr-0d9f21030174e69aa	All traffic	All	All	C... sg-0e67db7abaff84225	<input type="button" value="Delete"/>
-	PostgreSQL	TCP	5432	M... 223.181.100.173 /32	<input type="button" value="Delete"/>