



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment 9

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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

The screenshot shows the AWS homepage with a dark theme. In the top navigation bar, there is a search bar with the text 'RDS'. Below the search bar, the 'Services' section is visible, featuring three main services: 'Aurora and RDS', 'Database Migration Service', and 'Kinesis'. Each service has a small icon, a title, and a brief description. On the left side, there is a sidebar with a 'Dashboard' button and a list of other services like 'Databases', 'Performance', 'Snapshots', and 'Exports in Amazon S3'. The top right corner shows the account ID '5407-13' and the region 'Europe (Stockholm)'. The overall layout is clean and organized, typical of the AWS user interface.

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



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The screenshot shows the AWS Aurora and RDS Dashboard in the Europe (Stockholm) region. The left sidebar includes links for 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, and Recommendations (0). The main panel displays 'Resources' with sections for DB Instances (0/40), Allocated storage (0 TB/100 TB), Instances and storage include Neptune and DocumentDB, Increase DB instances limit (button), Reserved instances (0/40), Reserved instances (0), Snapshots (0), Manual (DB Cluster (0/100), DB Instance (0/100)), Automated (DB Cluster (0), DB Instance (0)), Recent events (0), and Event subscriptions (0/20). It also lists Parameter groups (0), Default (0), Custom (0/100), Option groups (0), Default (0), Custom (0/20), Subnet groups (0/50), and Supported platforms (VPC). A note at the bottom states: 'Note: your DB instances will launch in the Europe (Stockholm) region'. A prominent orange 'Create a database' button is located in the center of the dashboard.

4. CLICK ON CREATE DATABASE

The screenshot shows the 'Create database' wizard in the 'Databases' section. At the top, there's a message about the free plan: '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' with a 'Upgrade plan' button. Below this, the 'Create database' title has an 'Info' link. The 'Choose a database creation method' section offers two options: 'Standard create' (radio button) and 'Easy create' (radio button, selected). The 'Configuration' section allows selecting an engine type: PostgreSQL (selected), Aurora (MySQL Compatible), Aurora (PostgreSQL Compatible), MySQL, MariaDB, Oracle, and Microsoft SQL Server. Each engine has its respective icon and name displayed.

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.large
4 vCPUs
32 GiB RAM
400 GiB
1,946 USD/hour

<input type="radio"/> Dev/Test
db.r7g.large
2 vCPUs
16 GiB 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:mysql8-0	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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The screenshot shows the AWS Aurora and RDS Databases interface. On the left, there's a sidebar with options like Dashboard, Databases (which is selected), Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, and Subnet groups. The main area has a blue header box stating 'Creating database strugmac-db' with a note about configuration and a 'View connection details' button. Below this is a table titled 'Databases (1)'. The table has columns for DB identifier, Status, Role, and Engine. It shows one row for 'strugmac-db' which is currently 'Creating'. There are also 'Actions' and 'Create database' buttons at the top of the table area.

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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The screenshot shows the AWS Management Console interface. At the top, the navigation bar includes the AWS logo, a search bar, and account information (Account ID: 5407-1396-0939, Region: Europe (Stockholm)). The main menu on the left shows 'Console Home' and 'All services'. The 'All services' page displays a grid of service icons and names under categories like Compute, Machine Learning, and Containers. The 'Compute' category is expanded, showing services like EC2, Lightsail, Lambda, etc. The 'EC2' service is selected, leading to the 'Instances' page. This page features a sidebar with options like Dashboard, AWS Global View, Events, Instances, Images, and more. The main content area is titled 'Benefits and features' and highlights 'EC2 offers ultimate scalability and control'. It lists benefits such as highest level of control, widest variety of server size options, widest availability of operating systems, and global scalability. It also includes links to 'Launch a virtual server' (with 'Launch instance' and 'View dashboard' buttons) and 'Additional actions' (with 'View running instances' and 'Migrate a server' buttons). Below this, the 'Use cases' section is shown. The bottom part of the screenshot shows the 'Instances' tab selected in the EC2 service navigation bar, with a message indicating 'No instances' found and a 'Launch instances' button.

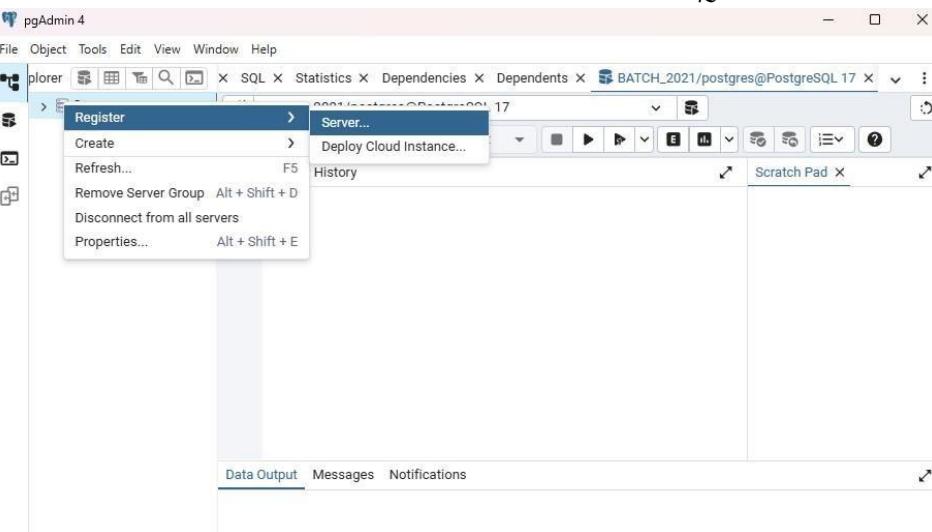


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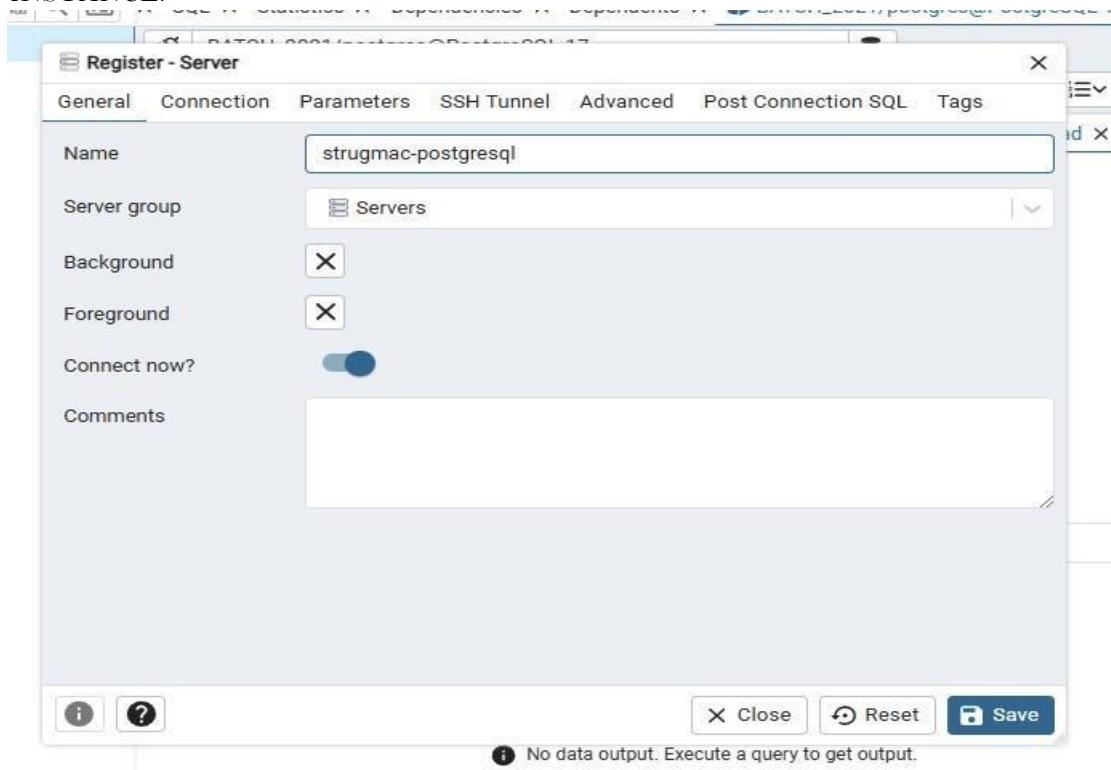
OTHER OPTION IS THAT WE CAN CONNECT THE POSTGRES AWS RDS TO OUR LOCAL MACHINE.

1. CREATE AWS RDS DATABASE FOR POSTGRESQL



2. CONNECT FROM PGADMIN.

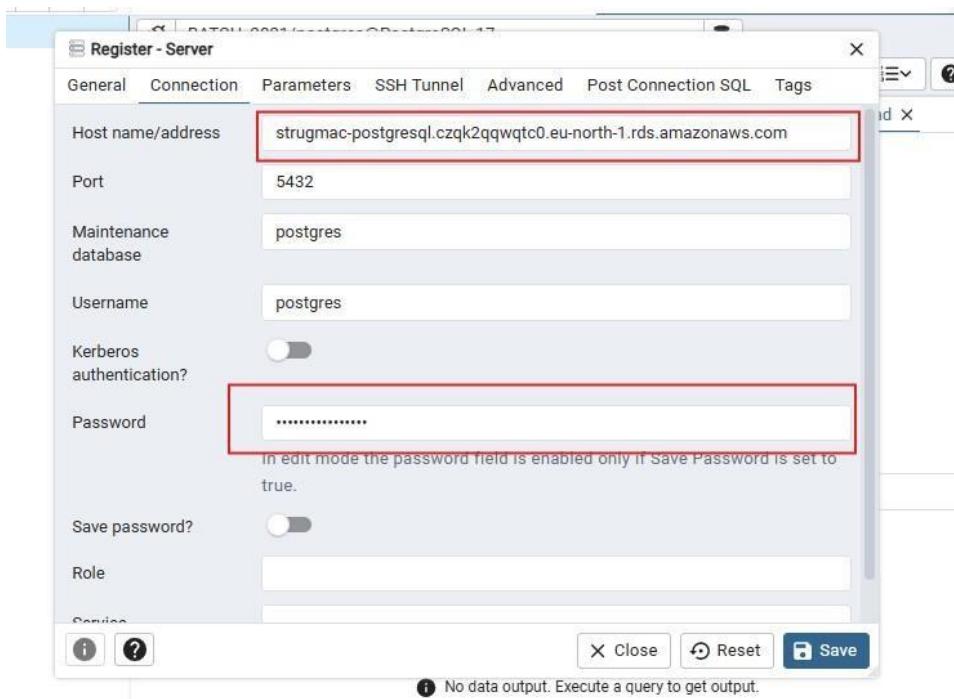
3. COPY THE API ENDPOINTS FROM THE DASHBOARD OF AWS RDS DATABASE INSTANCE.



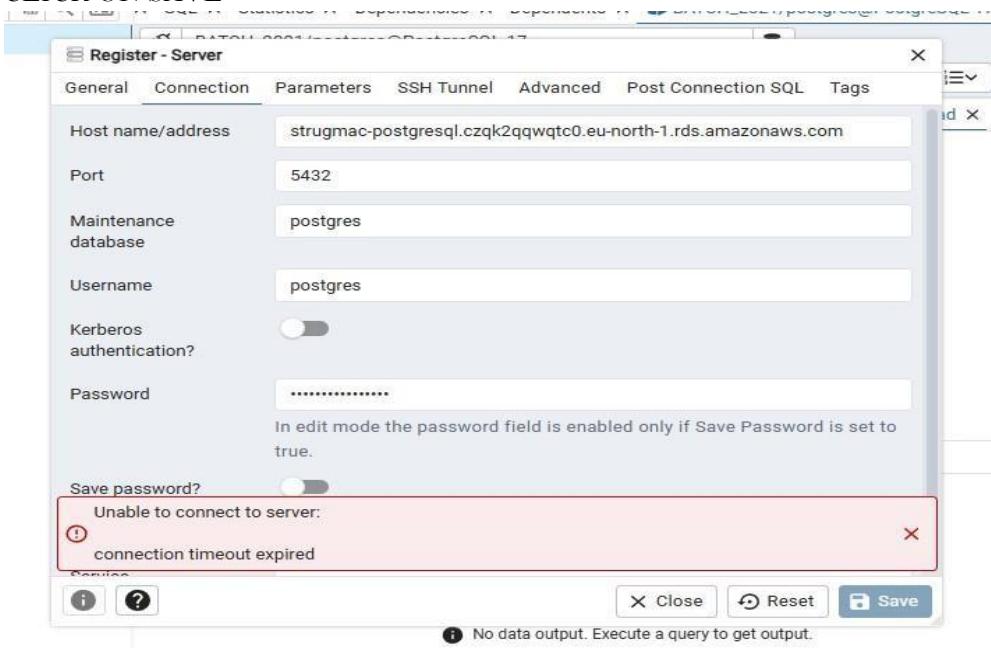


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4. CLICK ON SAVE



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



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Connectivity & security

Endpoint & port	Networking	Security
Endpoint strugmac-postgresql.czqk2qqwqt0.eu-north-1.rds.amazonaws.com	Availability Zone eu-north-1c	VPC security groups default (sg-0e67db7abaff84225) Active
Port 5432	VPC vpc-081fe9fe127bb8e79	Publicly accessible No
	Subnet group default-vpc-081fe9fe127bb8e79	Certificate authority Info rds-ca-rsa2048-g1
	Subnets subnet-00bf0147db6493492 subnet-0aa3f608f07d8cecc subnet-0f9ee2b6eb9698f78	Certificate authority date May 25, 2061, 03:29 (UTC+05:30)

Edit inbound rules [Info](#)

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

Security group rule ID	Type Info	Protocol Info	Port range	Source Info	Description - optional Info
sgr-0d9f21030174e69aa	All traffic	All	5432	C... Delete	sg-0e67db7abaff84225
-	PostgreSQL	TCP	M... Delete	223.181.100.173 /32	

[Add rule](#) [Cancel](#) [Preview changes](#) [Save rules](#)