



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discover. Learn. Empower.

Experiment 9

Student Name: Sukhjinder Singh

UID: 23BAI70078

Branch: BE-AIT-CSE

Section/Group: 23AIT-KRG-G2

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Subject Name: ADBMS

Subject Code: 23CSP-333

1. AIM: Amazon Web Service RDS.

2. Tools Used: pgAdmin4

3. Experiment:

- overview of AWS RDS
- creation of database instance on AWS RDS
- security groups
- connecting local pgadmin to cloud rd.

4. Solution:

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

A screenshot of the AWS RDS service page. The top navigation bar shows the AWS logo, a search bar with 'RDS', and account information ('Account ID: 5407-13', 'Europe (Stockholm)'). On the left, there's a sidebar with links like 'Aurora and RDS', 'Dashboard', 'Databases', 'Performance', 'Snapshots', 'Exports in Amazon RDS', 'Automated backups', 'Reserved instances', and 'Proxies'. The main content area has a heading 'Services' and a list of services: 'Aurora and RDS' (Managed Relational Database Service), 'Database Migration Service' (Managed Database Migration Service), and 'Kinesis' (Work with Real-Time Streaming Data). Each service entry includes a star icon for favoriting.

4. Click on create database

Screenshot of the AWS Aurora and RDS 'Create database' wizard.

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 

Microsoft SQL Server 

DB instance size

Production
db.r7g.xlarge
4 vCPUs
32 GiB RAM
400 GiB
1.946 USD/hour

Dev/Test
db.r7g.large
2 vCPUs
16 GiB RAM
200 GiB
0.278 USD/hour

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.

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 [Info](#)
Type a login ID for the master user of your DB instance.

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](#)

Aurora and RDS

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

Databases (1)

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

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,

All services

Services by category

- Compute**
 - EC2
 - 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
- Containers**
- Machine Learning**
 - 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
 - Amazon Translate

EC2

Benefits and features

EC2 offers ultimate scalability and control

Fully resizable compute capacity to support virtually any workload. This service is best if you want:

- Highest level of control of the entire technology stack, allowing full integration with all AWS services
- Wide variety of server size options
- Widest availability of operating systems to choose from including Linux, Windows, and macOS
- Global scalability

[Find out more about EC2](#)

Use cases

Launch a virtual server

- Launch instance
- View dashboard
- Get started walkthroughs
- Get started tutorial

Additional actions

- View running instances
- Migrate a server

EC2 > Instances

Instances

Info

Actions

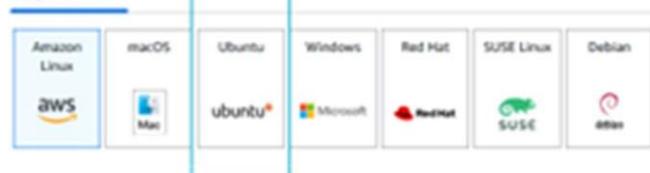
Launch Instances

▼ 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



Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

▼ 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

▼ 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 group) 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-0e67cb7xb0ff84225 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.

▼ Summary

Number of instances Info

1

Software image (AMI)

Canonical, Ubuntu, 24.04, amd64... [read more](#)
ami-0a716cd5f5b16d190c

Virtual server type (instance type)

t3.micro

Firewall (security group)

default

Storage (volumes)

1 volume(s) - 8 GiB

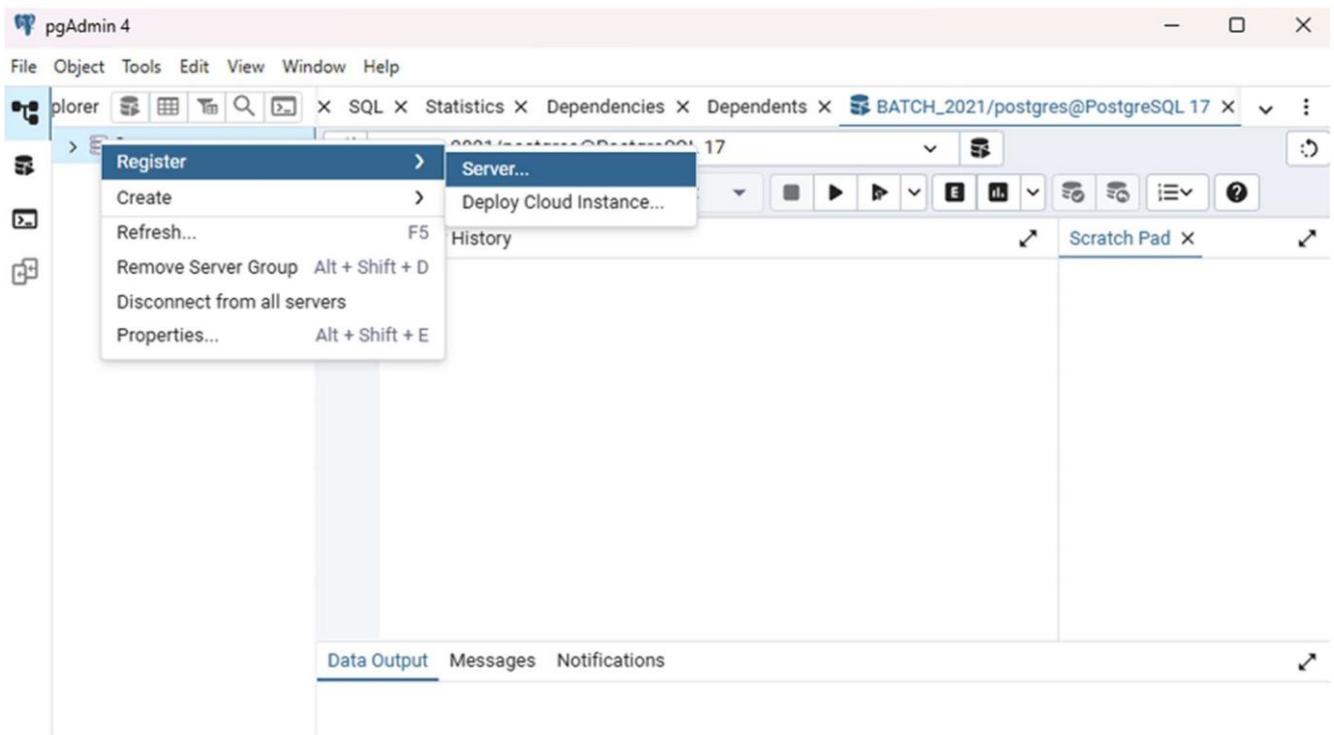
Cancel

Launch instance

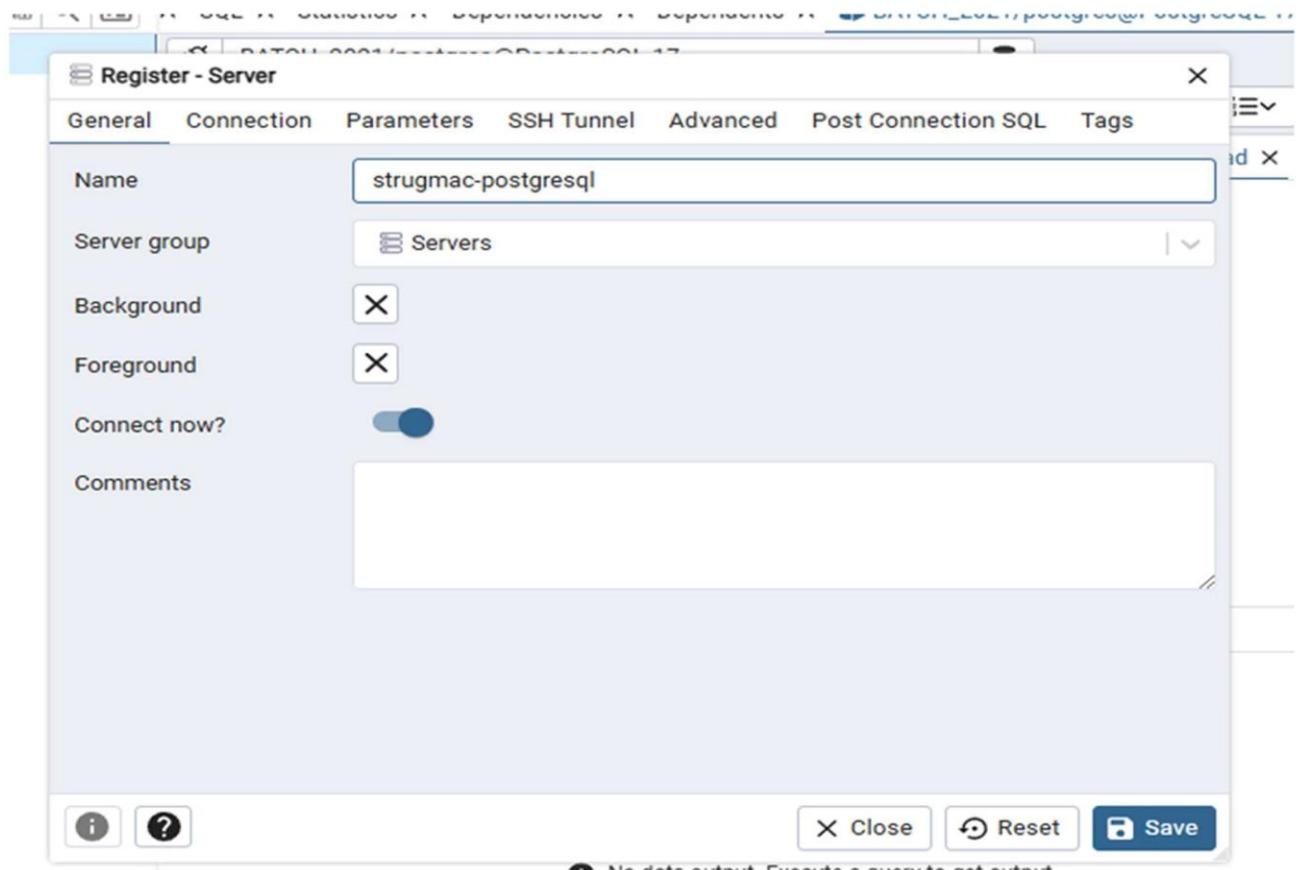
Preview code

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.



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



Register - Server

General Connection Parameters SSH Tunnel Advanced Post Connection SQL Tags

Host name/address: strugmac-postgresql.czqk2qqwqtc0.eu-north-1.rds.amazonaws.com

Port: 5432

Maintenance database: postgres

Username: postgres

Kerberos authentication?: Off

Password:
In edit mode the password field is enabled only if Save Password is set to true.

Save password?: Off

Role:

Service:

Close Reset Save

No data output. Execute a query to get output.

5. Output:

Connectivity & security

Endpoint & port	Networking	Security
Endpoint strugmac-postgresql.czqk2qqwqtc0.eu-north-1.rds.amazonaws.com	Availability Zone eu-north-1c VPC vpc-081fe9fe127bb8e79	VPC security groups default (sg-0e67db7abaff84225) Active
Port 5432	Subnet group default-vpc-081fe9fe127bb8e79	Publicly accessible No
	Subnets subnet-00bf0147db6493492 subnet-0aa3f608f07d8cecc subnet-0f9ee2b6eb9698f78	Certificate authority Info rds-ca-rsa2048-g1
		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.

Inbound rules Info

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

Add rule Cancel Preview changes Save rules

6. Learning Outcomes:

- Learn't about AWS RDS.
- Learn't how to create a database instance on AWS RDS.
- Learn't how to connect local pgAdmin to Cloud RD.