

# Visualise a Relational Database

SA

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# Introducing Today's Project!

## What is Amazon RDS?

Amazon RDS is a managed cloud service that simplifies database setup, scaling, and maintenance. It supports engines like MySQL and PostgreSQL, offers automated backups, high availability, and security, making it cost-effective.

## How I used Amazon RDS in this project

We used Amazon RDS in today's project to set up our own relational database and visualize it using Quicksight

## One thing I didn't expect in this project was...

One thing i didnt expect in this project is that how easy it is to connect RDS to quicksight.

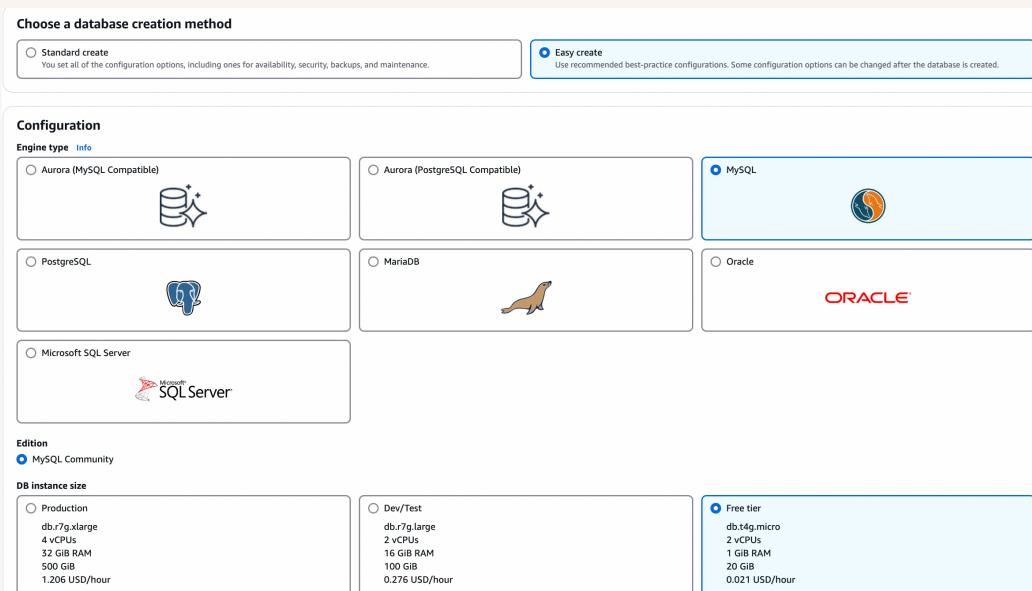
## This project took me...

It just took me around half an hour to finish this project.

# In the first part of my project...

## Creating a Relational Database

I created my relational database by navigating to RDS in the management console, create a new database by choosing a database engine, select the easy create database method and configure database settings like DB instance identifier, password.



# Understanding Relational Databases

A relational database (RDB) is a type of database that stores and organizes data in a structured format using tables, which are made up of rows and columns. It follows the principles of relational database management systems (RDBMS) and uses SQL.

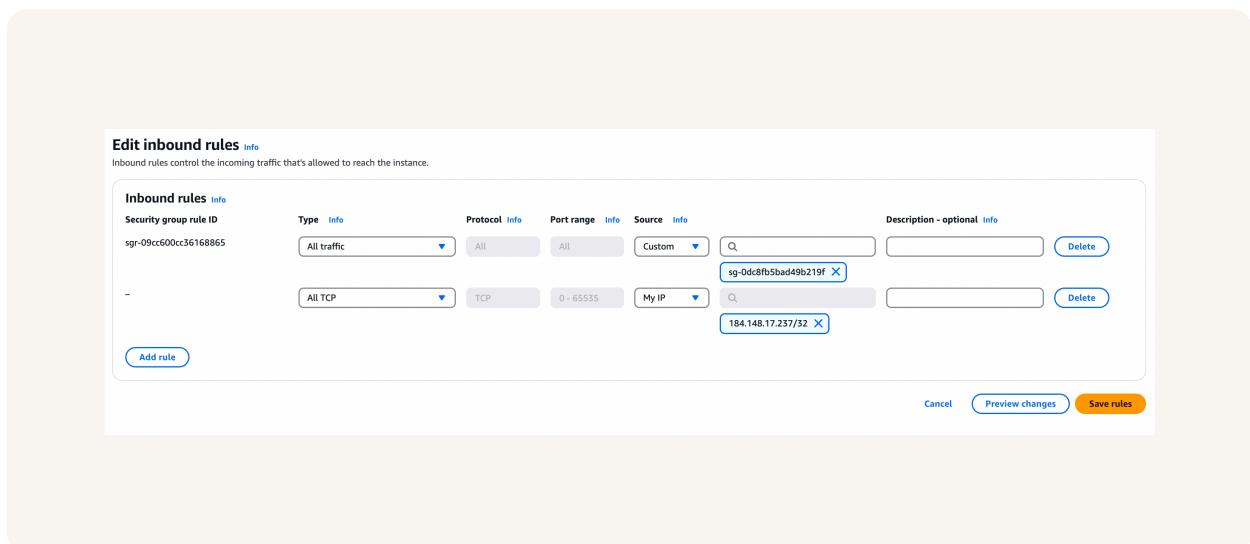
## MySQL vs SQL

SQL is a standard language used to manage and manipulate relational databases, applicable to various database systems like MySQL, PostgreSQL, and SQL Server. MySQL, on the other hand, is a specific relational database management system (RDBMS).

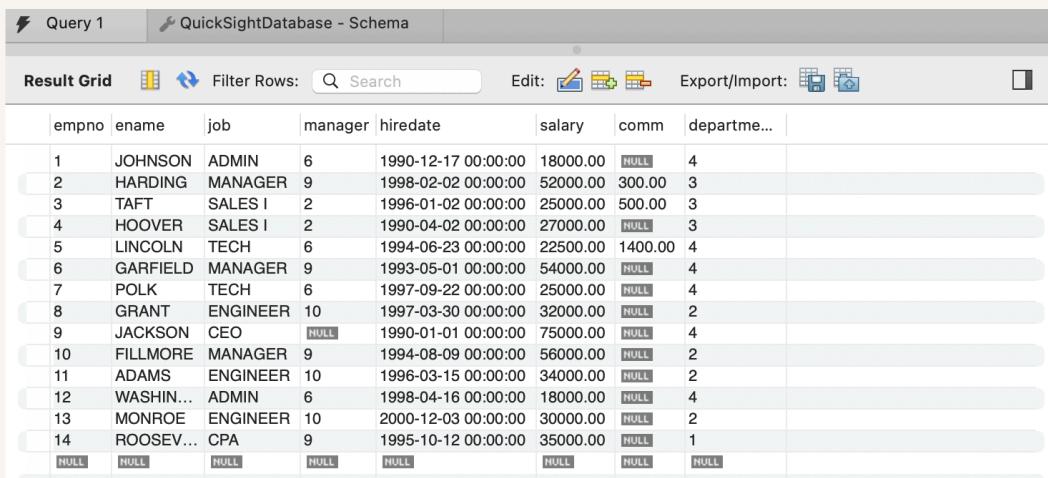
# Populating my RDS instance

The first thing I did was make my RDS instance public so that i can access it from my local machine using MYSQL workbench.

I had to update the default security group for my RDS schema by changing the inbound rule to allow tcp traffic from only my IP address which allows my local machine MYSQL workbench to access the AWS RDS instance.



# Using MySQL Workbench



The screenshot shows the MySQL Workbench interface with a query results grid. The title bar says "Query 1" and "QuickSightDatabase - Schema". The toolbar includes "Result Grid", "Filter Rows", "Search", "Edit" (with icons for insert, update, delete), and "Export/Import". The table has columns: empno, ename, job, manager, hiredate, salary, comm, and departme... (partially visible). The data shows 14 rows of employee information.

empno	ename	job	manager	hiredate	salary	comm	departme...
1	JOHNSON	ADMIN	6	1990-12-17 00:00:00	18000.00	NULL	4
2	HARDING	MANAGER	9	1998-02-02 00:00:00	52000.00	300.00	3
3	TAFT	SALES I	2	1996-01-02 00:00:00	25000.00	500.00	3
4	HOOVER	SALES I	2	1990-04-02 00:00:00	27000.00	NULL	3
5	LINCOLN	TECH	6	1994-06-23 00:00:00	22500.00	1400.00	4
6	GARFIELD	MANAGER	9	1993-05-01 00:00:00	54000.00	NULL	4
7	POLK	TECH	6	1997-09-22 00:00:00	25000.00	NULL	4
8	GRANT	ENGINEER	10	1997-03-30 00:00:00	32000.00	NULL	2
9	JACKSON	CEO	NULL	1990-01-01 00:00:00	75000.00	NULL	4
10	FILLMORE	MANAGER	9	1994-08-09 00:00:00	56000.00	NULL	2
11	ADAMS	ENGINEER	10	1996-03-15 00:00:00	34000.00	NULL	2
12	WASHIN...	ADMIN	6	1998-04-16 00:00:00	18000.00	NULL	4
13	MONROE	ENGINEER	10	2000-12-03 00:00:00	30000.00	NULL	2
14	ROOSEV...	CPA	9	1995-10-12 00:00:00	35000.00	NULL	1
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

To populate my database I used the query - insert into table\_name(parameters) values

# Connecting QuickSight and RDS

To connect my RDS instance to QuickSight I selected the datasets and gave the information of my RDS instance like database name, password and connected to my instance.

This solution is risky because we gave permissions to the RDS instance to be available to everyone.

## A better strategy

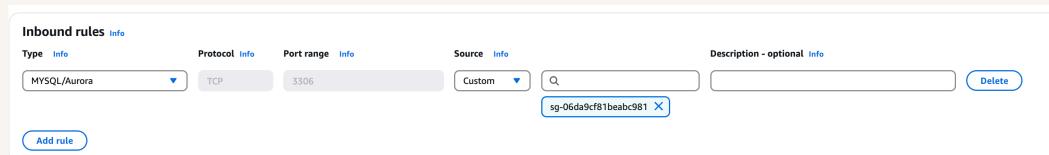
First, I made a new security group so that it is for the Quicksight and later we can attach this to the RDS security group so that we can securely access RDS from Quicksight.

Next, I connected my new security group to QuickSight by navigating to manage quicksight and clicking on manage vpc connections and added my new vpc connection with the security group we created for quicksight earlier.

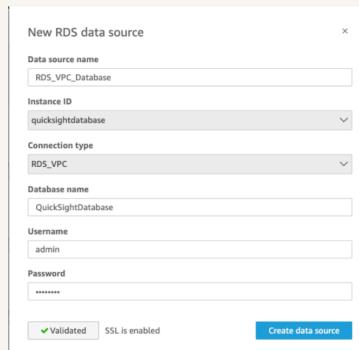
# Now to secure my RDS instance

To make my RDS instance secure I made the RDS instance private i.e no one can access it publicly. Further i created a new security group with the inbound rule that it allows traffic from MySQL from the security group we created earlier.

I made sure that my RDS instance could be accessed from QuickSight by creating our own RDS security group, adding inbound rules to allow QuickSight in, and attaching it to our RDS instance.



# Adding RDS as a data source for QuickSight



This data source is different from my initial data source because now the data source security group rules are more secure.





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