



# Visualise a Relational Database



Gloria

	empno	ename	job	manager	hiredate	salary	comm	department
▶	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



# Introducing Today's Project!

## What is Amazon RDS?

Amazon RDS is a service that makes it easy to set up and use databases in the cloud. It takes care of things like backups and updates so you don't have to. This helps you focus on using the database for your apps worrying less about managing it

## How I used Amazon RDS in this project

I used Amazon RDS in today's project to create and manage a relational database. I set it up to store data securely, connected it to QuickSight for visualizations, and used tools like MySQL Workbench to add and query data for analysis.

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

One thing I didn't expect in this project was the importance of the security. Setting up security groups, making RDS instance private, and ensuring only QuickSight could access it highlighted how crucial securing connections is when working in cloud.

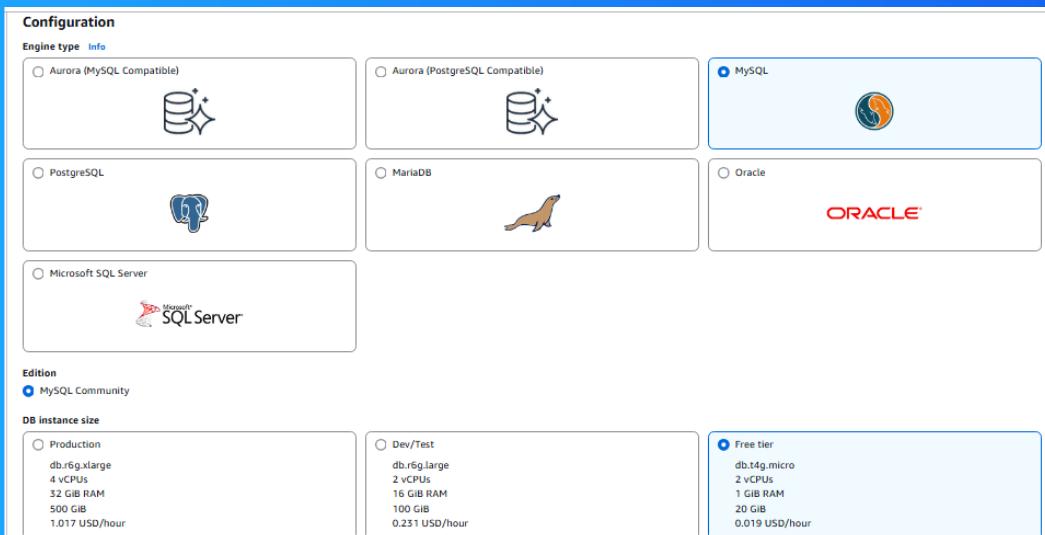
## This project took me...

This project took me about 2 hours to complete. Setting up the RDS instance, configuring security groups, connecting it to QuickSight, and creating datasets and visualizations required careful steps to ensure everything was secure and functional.

# In the first part of my project...

## Creating a Relational Database

I created my relational database by using Amazon RDS (Relational Database Service). I chose a database engine like MySQL, configured settings such as DB instance size and storage, set up credentials, and created the database.





# Understanding Relational Databases

A relational database is a type of database that organizes data into tables with rows and columns, like a spreadsheet. Each row represents a record, and columns represent attributes. It uses relationships between tables to keep data connected and str

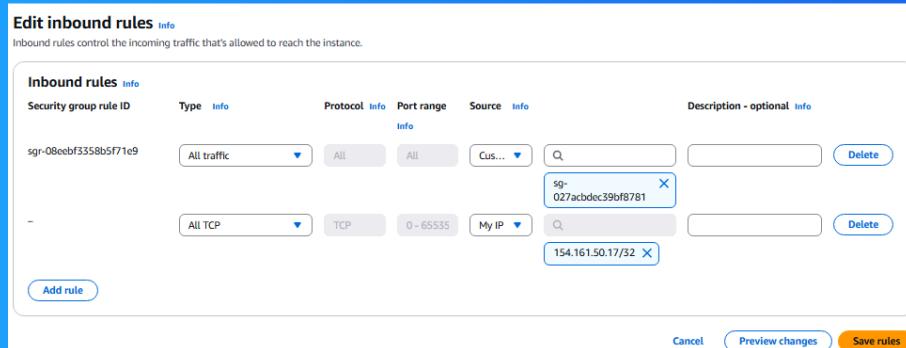
## MySQL vs SQL

The difference between MySQL and SQL is that SQL is a standard language for querying and managing databases, while MySQL is a relational database management system (RDBMS) that uses SQL to interact with data.

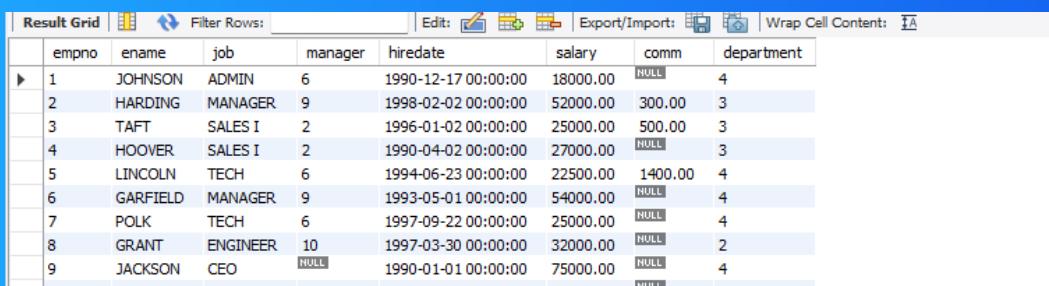
# Populating my RDS instance

The first thing I did was make my RDS instance public because this allows it to be accessed from outside the AWS network, like from my local computer. This is necessary for connecting tools like MySQL Workbench to manage the database remotely.

I had to update the default security group for my RDS schema because it blocks external connections by default. Updating it allows my local computer to connect to the database securely, ensuring only authorized access to the RDS instance.



# Using MySQL Workbench



A screenshot of the MySQL Workbench Result Grid interface. The grid displays data from a table with columns: empno, ename, job, manager, hiredate, salary, comm, and department. The data shows nine rows of employee information, including names like Johnson, Harding, and Jackson, along with their respective roles, managers, hire dates, salaries, commissions, and departments.

	empno	ename	job	manager	hiredate	salary	comm	department
▶	1	JOHNSON	ADMIN	6	1990-12-17 00:00:00	18000.00	NULL	4
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To populate my database, I used MySQL Workbench to create tables with a simple command. Then, I added data to the tables using another command and checked the data with a command to view the results. It was easy to add and see the data step by step.

# Connecting QuickSight and RDS

To connect my RDS instance to QuickSight, I updated the RDS security group to allow inbound access from QuickSight. Then, I added my RDS instance as a data source in QuickSight, configured the connection settings, and tested the connection to be valid.

This solution is risky because the RDS instance is publicly accessible, making it vulnerable to unauthorized access, hacking attempts, and data breaches. Without proper restrictions, malicious users could exploit this access to destroy sensitive data.

## A better strategy

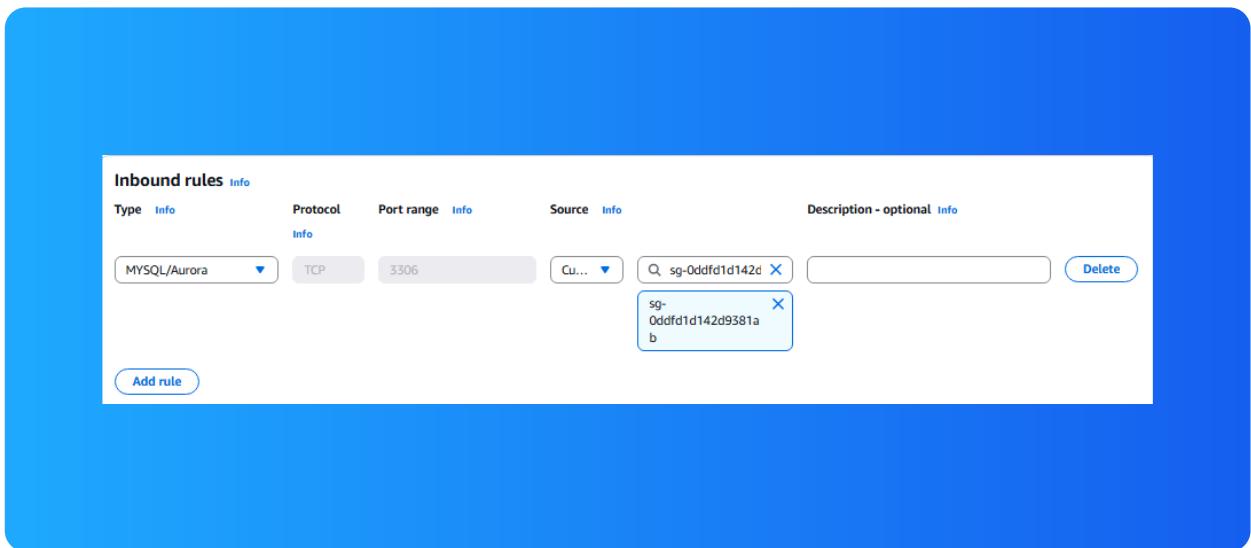
First, I made a new security group so that QuickSight could securely connect to the RDS instance. This security group allows us to control and limit access, ensuring only QuickSight can interact with the database, keeping it private and secure.

Next, I connected my new security group to QuickSight by creating a VPC connection in QuickSight and attaching the security group to it. This allowed QuickSight to securely access the RDS instance within the specified security group.

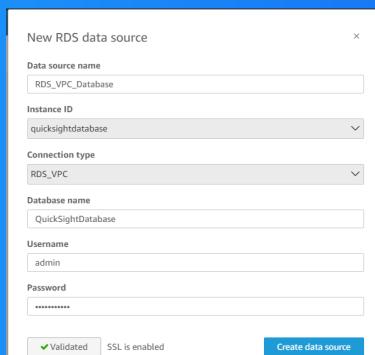
# Now to secure my RDS instance

To make my RDS instance secure, I made it private by disabling public access. Then, I created a new security group for RDS and allowed access only from my QuickSight security group. This ensures only QuickSight can connect, keeping the database safe.

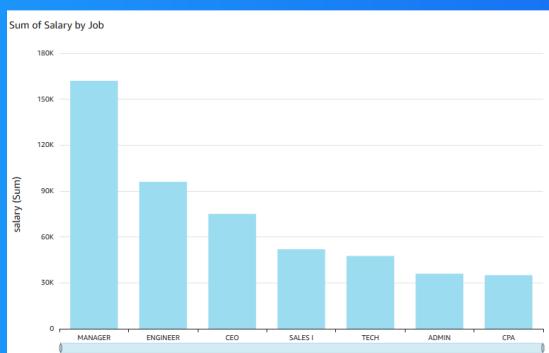
I made sure that my RDS instance could be accessed from QuickSight by configuring the RDS security group to allow inbound traffic from the QuickSight security group. This ensured secure communication between the two while blocking all other access.



# Adding RDS as a data source for QuickSight



This data source is different from my initial data source because it's now securely connected through a private network using security groups. Public access is disabled, and only QuickSight has permission to access the RDS instance.





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