



Visualise a Relational Database



mallangiharinathreddy727@gmail.com

The screenshot shows a database visualization interface for the 'emp' table in the 'newhire' database. The table has 14 rows and 8 columns: empno, ename, job, manager, hiredate, salary, comm, and department. The 'dept' column is labeled 'department' in the screenshot. The data includes various employees like Johnson, Harding, and Grant, each with their respective details such as hire date and salary.

	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
	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	ROOSEVELT	CPA	9	1995-10-12 00:00:00	35000.00	NULL	1

Introducing Today's Project!

What is Amazon RDS?

RDS is the Relational Database Service in AWS. It's useful for containing and creating databases that have related data.

How I used Amazon RDS in this project

Today I used RDS to create relational database that I populated using MYSQL workbench. I then visualised my data using QuickSight.

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

One I didn't expect in this project was, How much Security Group action there was! They matter a lot!

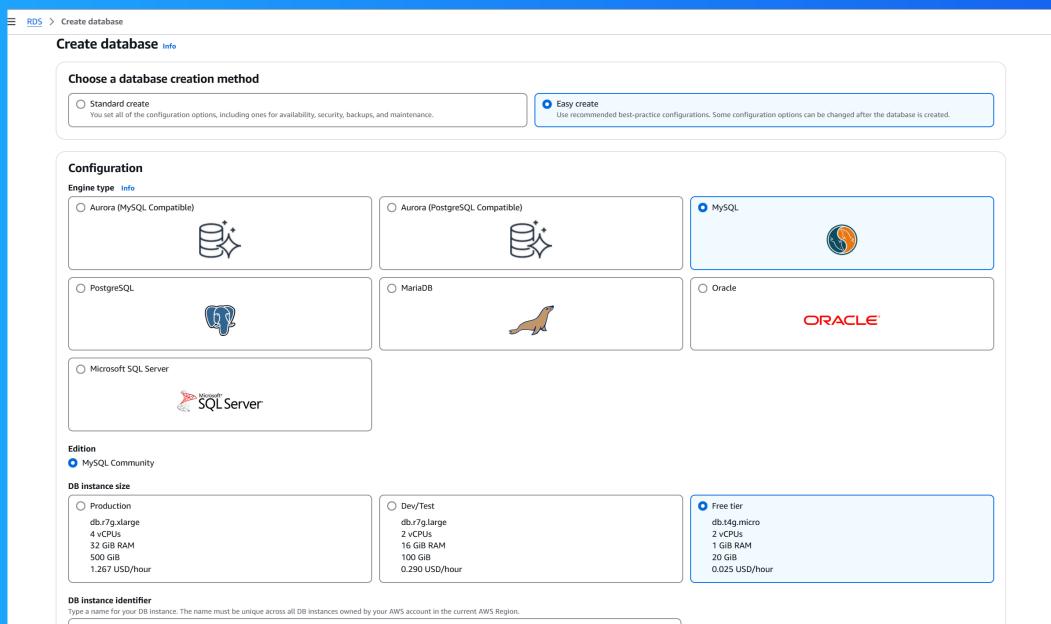
This project took me...

This project took me 2 Hours to complete include the documentation.

In the first part of my project...

Creating a Relational Database

I created my relational database by going to RDS in AWS and following the Easy Create steps. I set up the name and login details of my database.



Understanding Relational Databases

A relational database is a type of database that organizes data into tables, which are collections of rows and columns. Kind of like a spreadsheet! We call it "relational" because the rows relate to the columns and vice-versa.

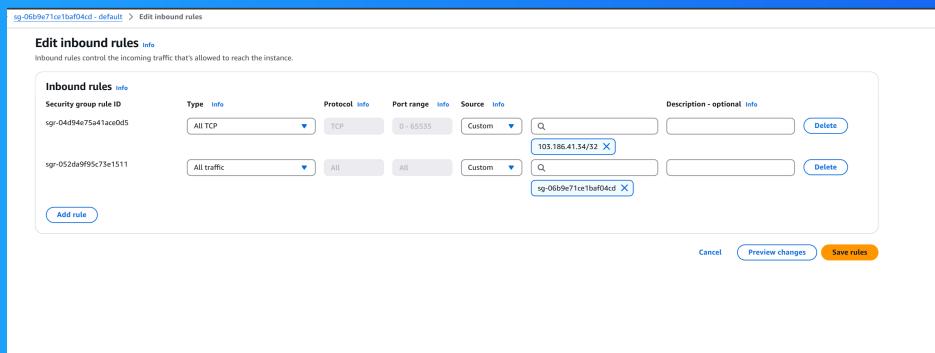
MySQL vs SQL

The difference between MySQL and SQL is SQL is a query language for extracting data from a database. MySQL is the framework for setting up a relational database. It's widely considered the classic.

Populating my RDS instance

The first thing I did was make my RDS instance public because I need to connect to it from MySQL workbench.

I had to update the default security group for my RDS schema because security groups are controlling and decide what traffic can access the AWS resources within it. I added my IP address as an accepted inbound rule.



Using MySQL Workbench

The screenshot shows the MySQL Workbench interface with a result grid titled 'Result Grid'. The grid displays 14 rows of data from a table, with columns labeled: empno, ename, job, manager, hiredate, salary, comm, and department. The data includes various employees like Johnson, Harding, and Roosevelt, along with their respective details such as hire dates and salaries. The interface also features a sidebar with icons for Result Grid, Form Editor, Field Types, and Query Stats.

	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
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To populate my database I used SQL in the MySQL workbench app to Create, and populate my database tables. First I had to connect my RDS instance to MySQL using the Endpoint, port, username and password.

Connecting QuickSight and RDS

To connect my RDS instance to QuickSight I made my security group around my RDS instance allow traffic from any IP address so that QuickSight can connect easily.

This solution is risky because anyone can access our RDS instance, not just QuickSight. This is bad because the person might be bad. And data is important to keep private.

A better strategy

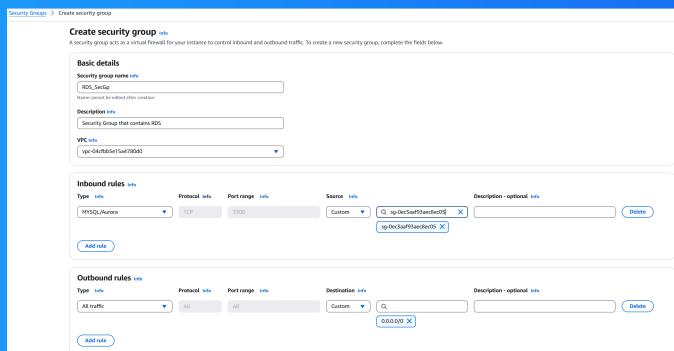
First, I made a new security group so that my QuickSight will be secure.

Next, I connected my new security group to QuickSight by creating a connection to QuickSight and my VPC, and then my security group. I had to update my IAM role that was used to do this.

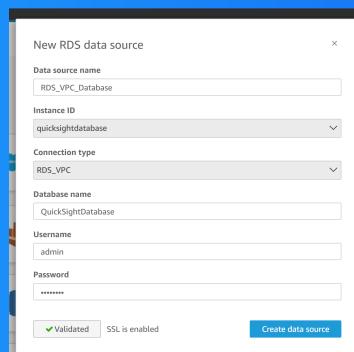
Now to secure my RDS instance

To make my RDS instance secure I made it not publicly accessible and then created a new security group for my RDS instance.

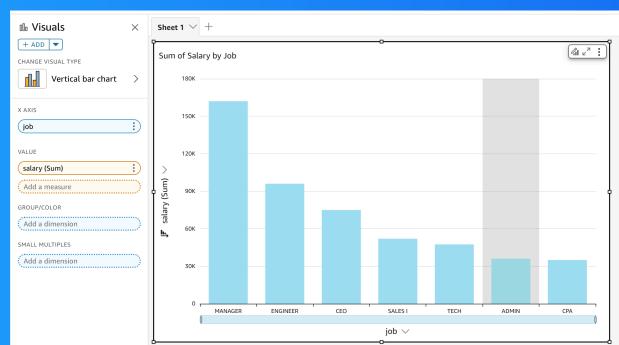
I made sure that my RDS instance could be accessed from QuickSight by creating the correct inbound rules that allowed querying of my RDS instance from my QuickSight security group.



Adding RDS as a data source for QuickSight



This data source is different from my initial data source because it is secure! YAY! we are using security groups to access our data in much more secure way rather than the defaults or things just being public.





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