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Visualise a Relational Database



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Result Grid Filter Rows: Search Edit: Export/

	empno	ename	job	manager	hiredate	salary	comm	depar
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	

Introducing Today's Project!

What is Amazon RDS?

RDS is the relational database service in AWS. It is useful for containing and creating databases that have related data.

How I used Amazon RDS in this project

I created a relational database instance in AWS and then populated it using MySQL Workbench. I also made it publicly accessible and then connected it to MySQL Workbench through the VPC. I then visualized the data using QuickSight.

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

How much security group action there was?

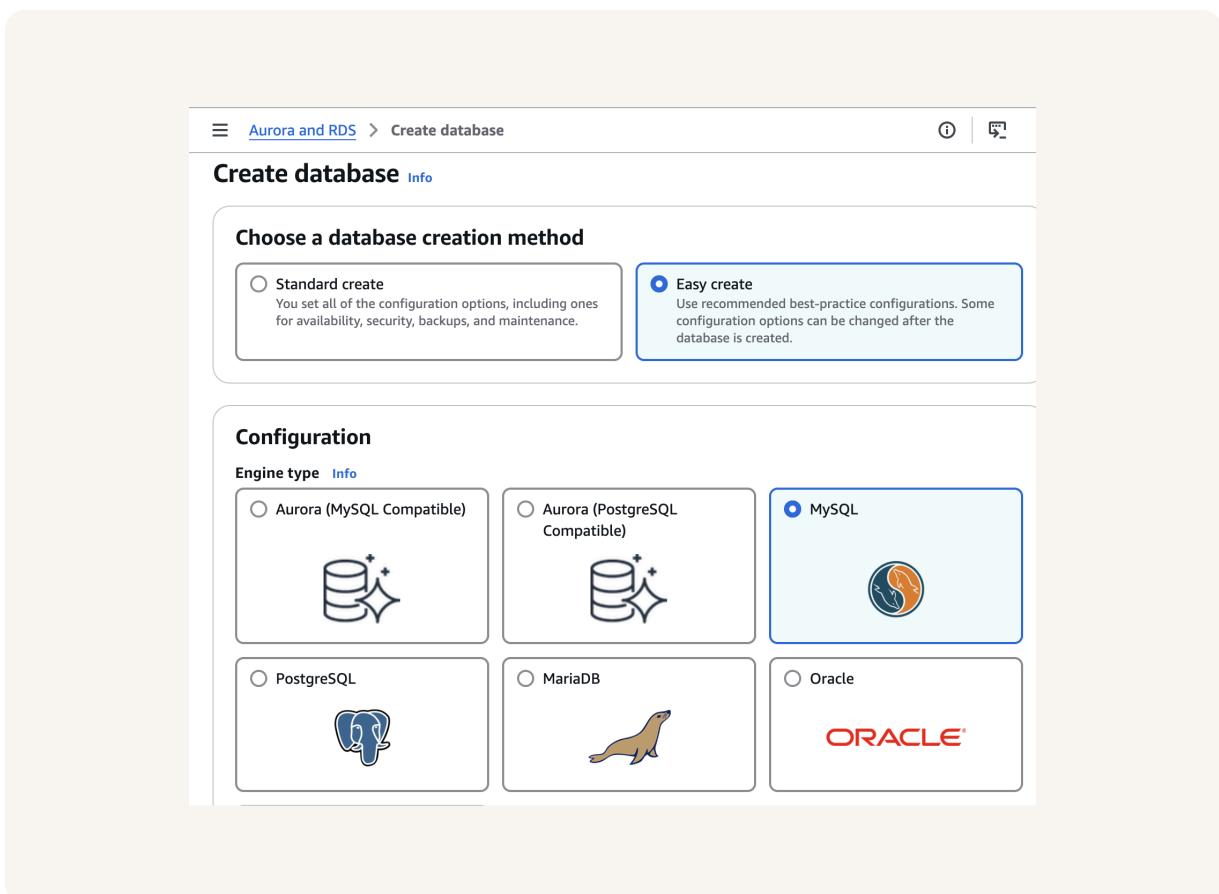
This project took me...

It took me about 1hr.

In the first part of my project...

Creating a Relational Database

I created my relational database by going to RDS in AWS, selecting database on the left hand panel and clicking the create database button. I selected the EasyCreate step, and added other configurations.



Understanding Relational Databases

A relational database is a type of database that organizes data into tables, which are collections of rows and columns.

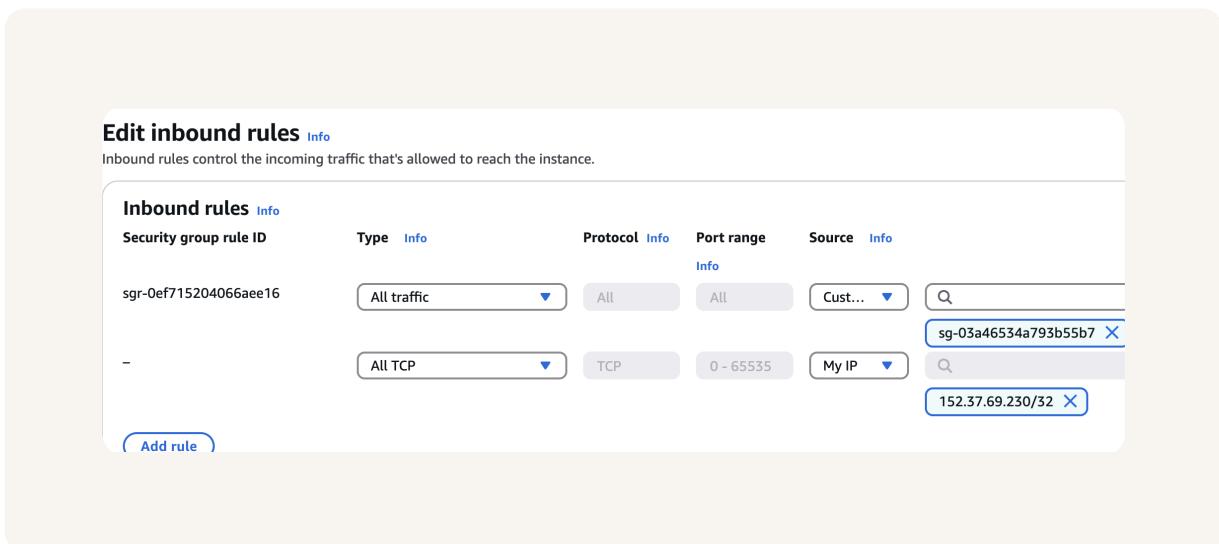
MySQL vs SQL

The difference between MySQL and SQL is MySQL is a relational database management system that uses SQL as the language for database interaction while SQL is a standard programming language used for managing and manipulating relational databases.

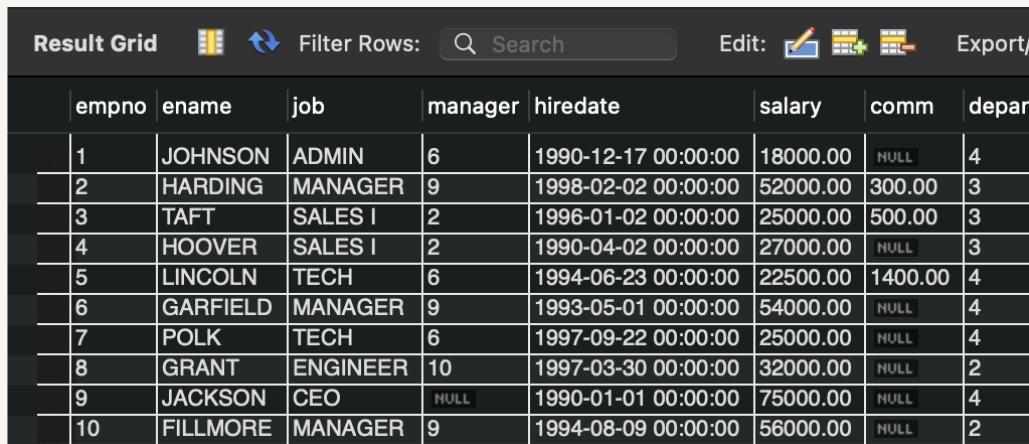
Populating my RDS instance

The first thing I did was make my RDS instance public because I want to allow connections from outside the AWS network (ie. from my local machine using MySQL Workbench)

I had to update the default security group for my RDS schema because I needed MySQL Workbench to access my database. By saying that I only allow traffic from my current IP address, I am only allowing my machine to connect to the database



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 depa. The data shows 10 rows of employee information, including names like Johnson, Harding, and Jackson, along with their respective roles and salaries.

empno	ename	job	manager	hiredate	salary	comm	depa
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
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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 the RDS instance is publicly available. This is bad because anyone can access it, making it vulnerable to hackers and malicious people trying to get the data.

A better strategy

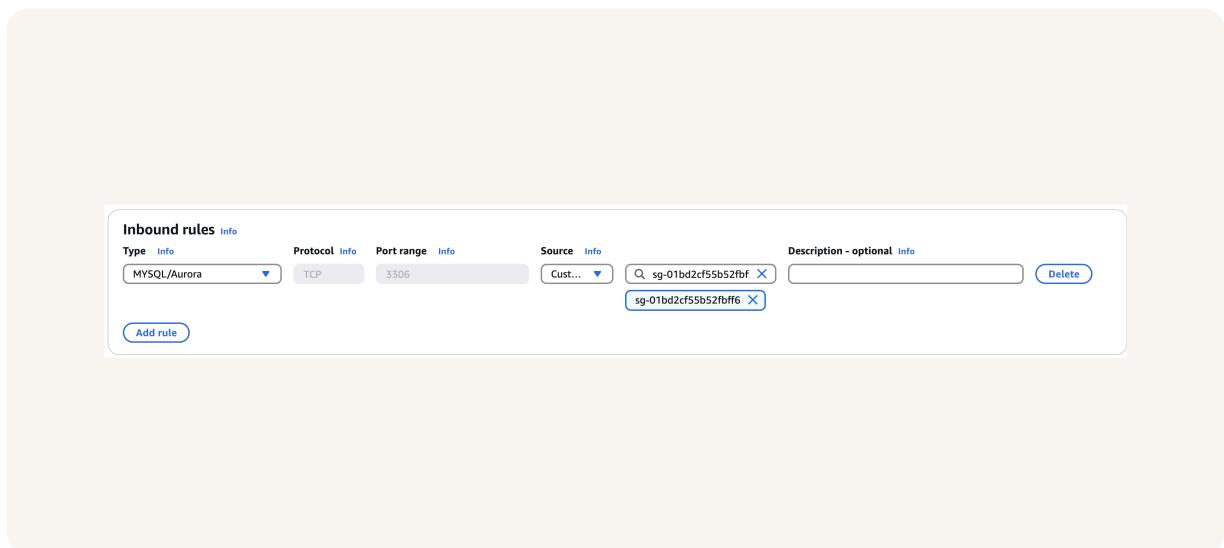
First, I made a new security group so that my QuickSight will be secure.

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.

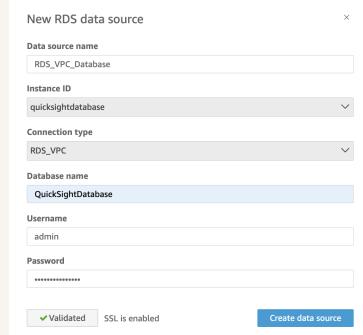
Now to secure my RDS instance

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

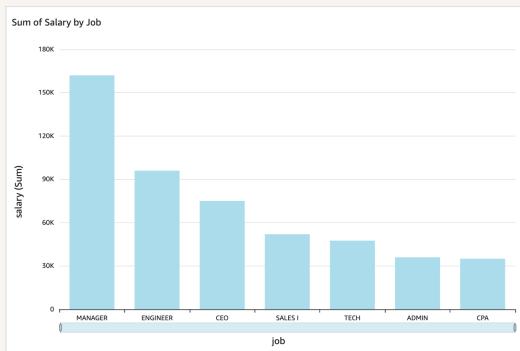
I made sure that my RDS instance could be accessed from QuickSight by creating a correct inbound rule that allowed querying of my RDS instance from my QuickSight security group.



Adding RDS as a data source for QuickSight



This data source is different from my initial data source because it is secure. I'm using security groups to access the data in a much more secure way rather than the defaults or things just being public.





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