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Visualise a Relational Database

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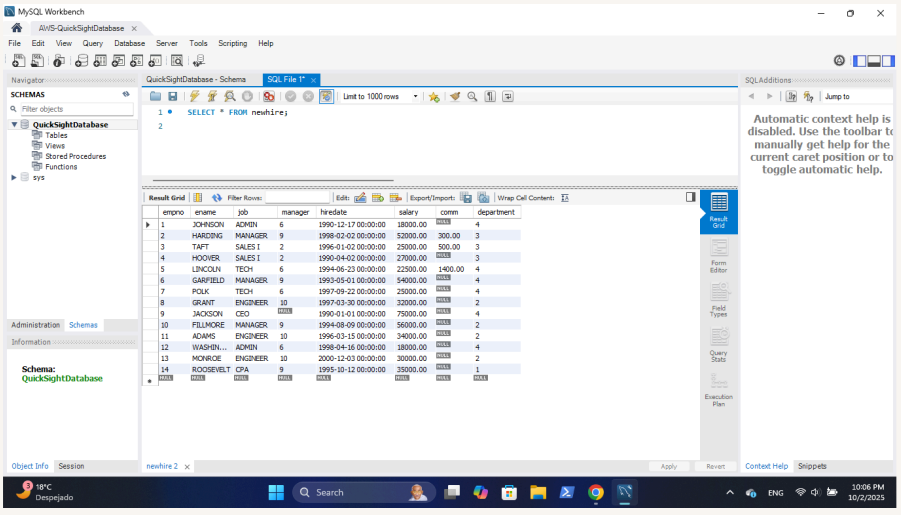


Introducing Today's Project!

What is Amazon RDS?

Amazon RDS is a managed relational database service that makes it easy to set up, operate, and scale databases in the cloud. It is useful because it handles backups, updates, and availability automatically.

How I used Amazon RDS in this project

I used Amazon RDS to create a MySQL database, populate it with tables and data, and then connect it to QuickSight for visualization.

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

I didn’t expect that making the RDS instance publicly accessible at first would be a security risk, and that we’d need to secure it using private security groups.

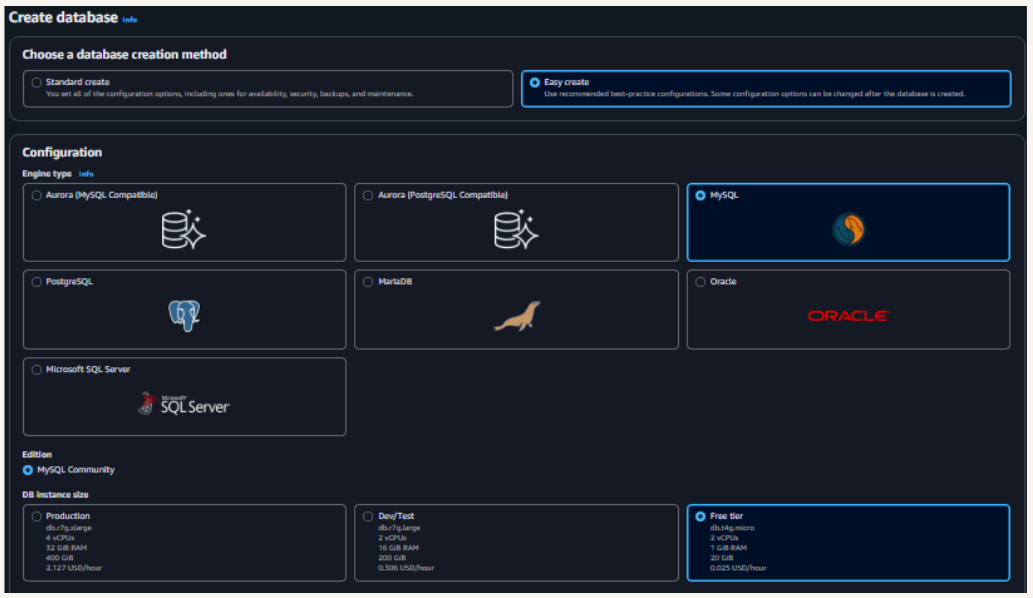
This project took me...

The project took me around 2 hours.

In the first part of my project...

Creating a Relational Database

I created a relational database in AWS by going to the RDS console, choosing Easy Create with MySQL, setting Free tier, naming it QuickSightDatabase, adding admin credentials, and launching the database.



Understanding Relational Databases

A relational database stores data in tables with rows and columns, and uses relationships to connect them.

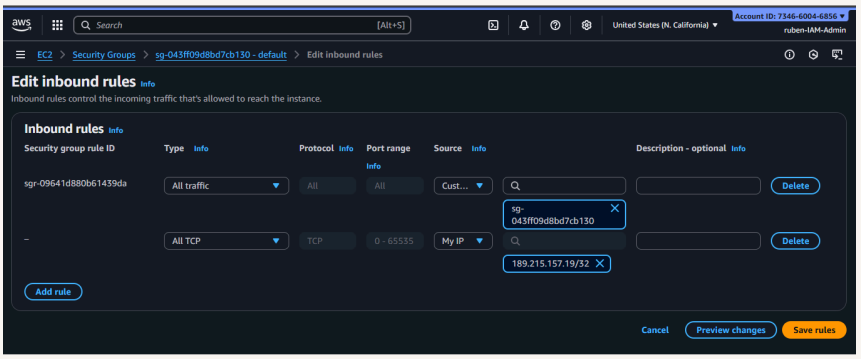
MySQL vs SQL

SQL is a language used to manage and query databases, while MySQL is a relational database management system that uses SQL to interact with data.

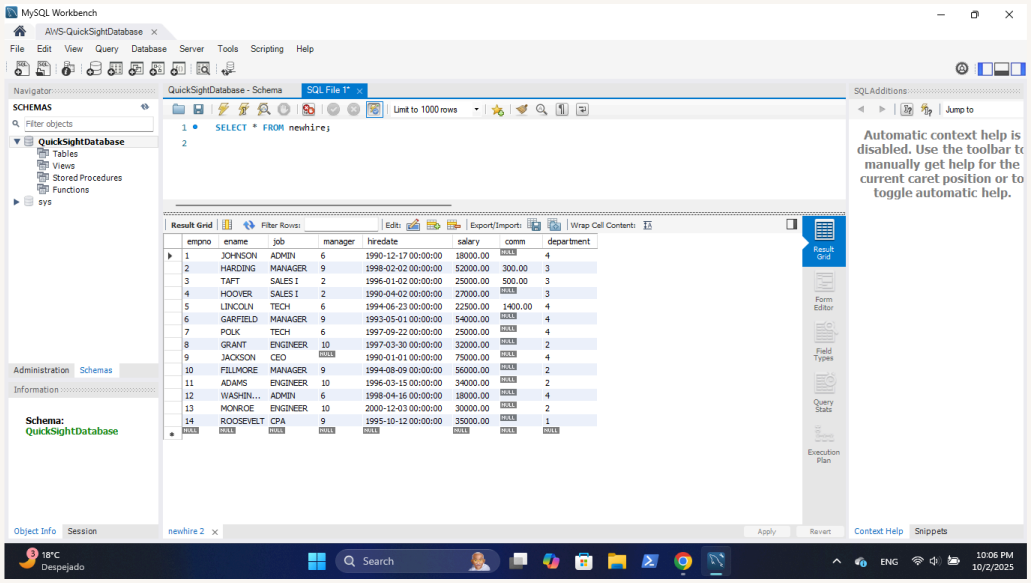
Populating my RDS instance

The first thing I did was make my RDS instance public so I could connect it to MySQL Workbench.

I had to update the default security group for my RDS schema so that my local machine could access my RDS instance.



Using MySQL Workbench



To populate my database, I used a SQL script in MySQL Workbench to create two tables and insert their values.

Connecting QuickSight and RDS

To connect RDS to QuickSight, I created a new dataset in QuickSight, selected RDS as the source, entered my database details (name, instance, credentials) and validated the connection.

This solution is risky because the RDS instance is publicly available, which makes it vulnerable to unauthorized access or attacks.

A better strategy

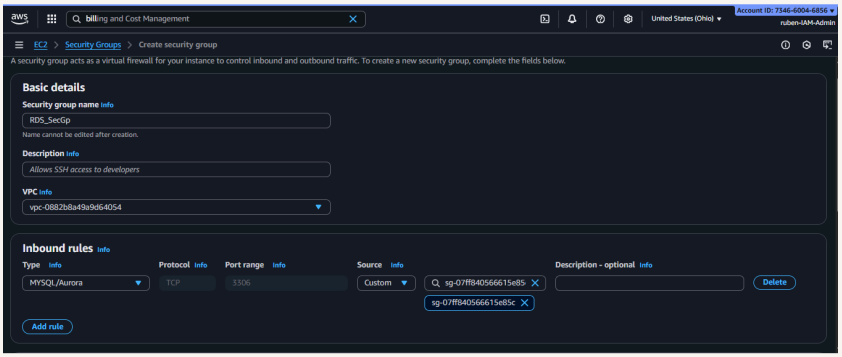
This new security group is for QuickSight, so it can securely connect to the RDS instance within the same VPC without making RDS public.

I connected my security group to QuickSight by creating a new security group in the same VPC, then adding a VPC connection in QuickSight with that security group ID and updating the execution role to allow the connection.

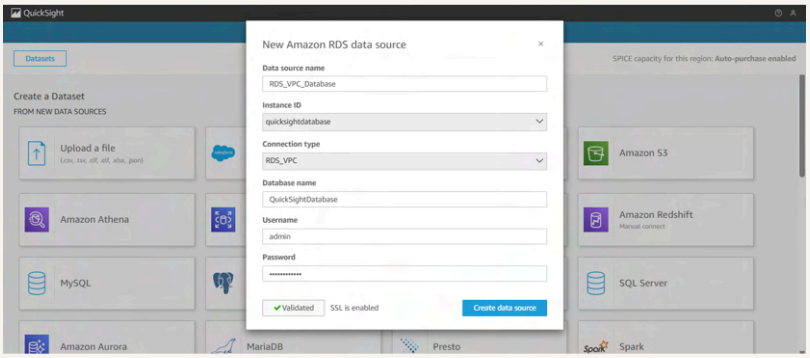
Now to secure my RDS instance

I secured my RDS instance by making it private, creating a new security group for it, and allowing inbound access only from the QuickSight security group.

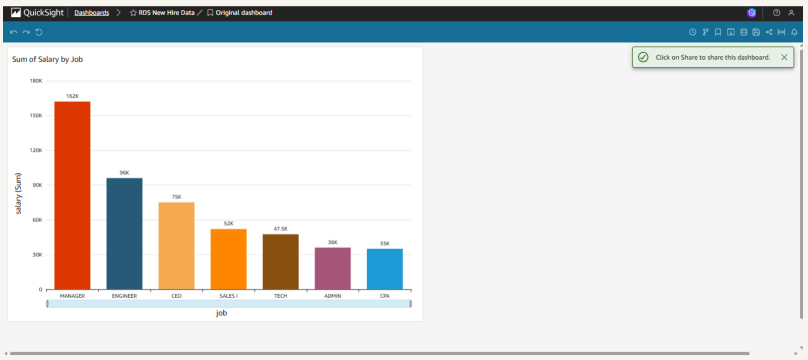
I secured my RDS instance by making it private, creating a dedicated security group for it, and allowing inbound access only from the QuickSight security group.



Adding RDS as a data source for QuickSight



This data source is different from my initial data source because is connected through private security groups, so it’s secure and no longer publicly accessible.



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