



Visualize a Relational Database



Ronson Lobo

The screenshot shows a database visualization interface. On the left, a tree view of schemas and tables is visible, with 'QuickSightDatabase' expanded to show 'Tables' like 'emp', 'dept', 'dept_manager', 'dept_history', 'emp_history', 'jobs', 'sal_history', and 'titles'. The main area displays the 'emp' table data in a grid format:

empno	ename	job	manager	hiredate	salary	comm	department
7	POLK	TECH	6	1997-09-22 00:00:00	25000.00	XXXX	4
8	GRANT	ENGINEER	10	1995-01-01 00:00:00	75000.00	XXXX	2
9	JACOBSON	CFO	1	1995-01-01 00:00:00	78000.00	XXXX	4
10	FELLMORE	MANAGER	9	1994-08-09 00:00:00	60000.00	XXXX	2
11	ADAMS	ENGINEER	10	1994-03-13 00:00:00	34000.00	XXXX	2
12	WASHBURN	ADMIN	6	1998-04-16 00:00:00	18000.00	XXXX	4
13	MONROE	ENGINEER	10	2000-12-03 00:00:00	30000.00	XXXX	2
14	ROOSEVELT	CPA	9	1995-10-12 00:00:00	35000.00	XXXX	1

Below the table, the 'Information' tab is selected, showing the 'Output' section with a log of actions:

#	Time	Action	Message	Duration / Fetch
3	03-24-06	CREATE TABLE newhire(empno INT PRIMARY KEY, ename VARCHAR(10), job VARCHAR(10), manager INT, hiredate DATE, salary DECIMAL(10,2), comm DECIMAL(10,2), department INT)	Error Code: 1045. No database selected Select the default DB to be used by double-clicking ...	0.016 sec
4	03-24-09	CREATE TABLE newhire(empno INT PRIMARY KEY, ename VARCHAR(10), job VARCHAR(10), manager INT, hiredate DATE, salary DECIMAL(10,2), comm DECIMAL(10,2), department INT)	Error Code: 1045. No database selected Select the default DB to be used by double-clicking ...	0.000 sec
5	03-24-25	CREATE TABLE newhire(empno INT PRIMARY KEY, ename VARCHAR(10), job VARCHAR(10), manager INT, hiredate DATE, salary DECIMAL(10,2), comm DECIMAL(10,2), department INT)	0 row(s) affected	0.031 sec
6	03-24-42	SELECT * FROM newhire LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
7	03-25-05	INSERT INTO newhire(empno, ename, job, manager, hiredate, salary, comm, department) VALUES (1, 'ALLEN', 'SALESMAN', 2, '1981-01-17 00:00:00', 1600, 1000, 10)	14 row(s) affected Records: 14 Duplicates: 0 Warnings: 0	0.000 sec
8	03-25-18	SELECT * FROM newhire LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec



Introducing Today's Project!

What is Amazon RDS?

Amazon Relational Database Service (Amazon RDS) is a cloud-based database service that makes it easier to manage relational databases. It's useful because it:

How I used Amazon RDS in this project

I used RDS to create data store it and connect it to SQL workbench and later pulled it up in AWS quick sight to show it graphically

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

I wasn't expecting this project will be so awesome

This project took me...

I was able to complete this project in 2 hours including everything

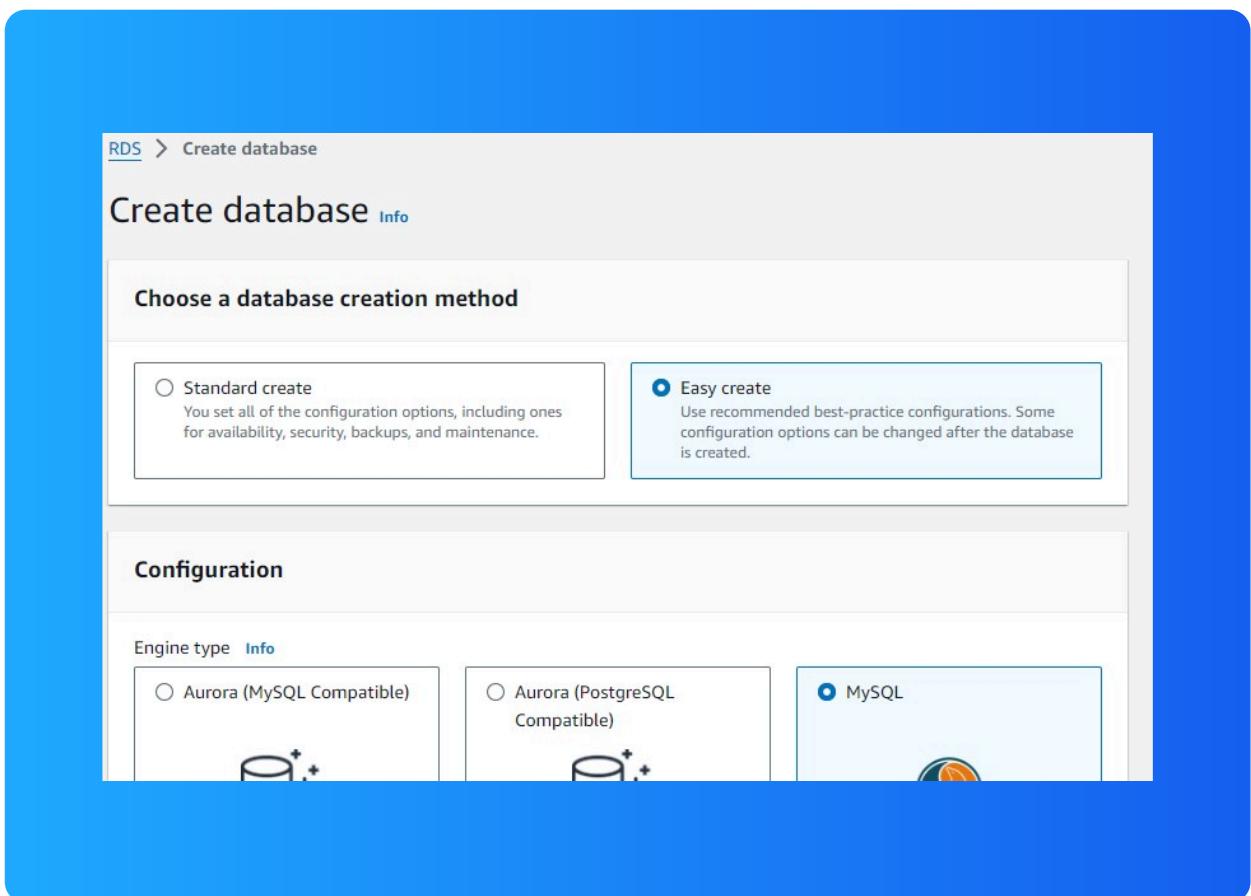
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In the first part of my project...

Creating a Relational Database

I created my relational database by using a easy create and engine option was Mysql. It was a self managed in terms of credentials





Understanding Relational Databases

A relational database is a type of database that stores and provides access to data points that are related to one another. It is based on the relational model, an intuitive and straightforward way of representing data in tables. In a relational data

MySQL vs SQL

SQL (Structured Query Language) is a standard language for managing relational databases, while MySQL is a specific open-source relational database management system (RDBMS) that uses SQL.

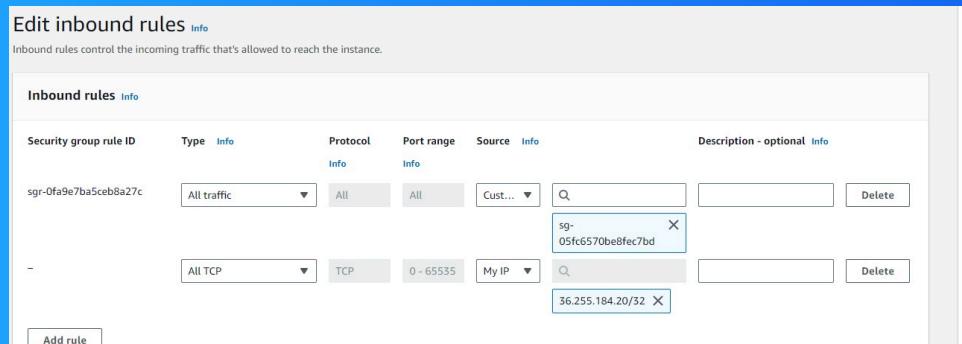
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Populating my RDS instance

The first thing I did was Made my AWS database public so we can connect it to MySQL Workbench and can be accessed publicly

We need MySQL Workbench to access our database, so we need to change the inbound traffic rules in the security group.





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Using MySQL Workbench

The screenshot shows the MySQL Workbench interface. On the left, the Navigator pane displays the 'SCHEMAS' section with 'QuickSightDatabase' selected. Under 'Tables', there is a single entry: 'newhire'. The main area, titled 'Query 1 - QuickSightDatabase - Schema', contains a SQL editor with the following code:

```
1 • SELECT * FROM newhire;
```

Below the SQL editor is a 'Result Grid' showing the data from the 'newhire' table:

empno	ename	job	manager	hiredate	salary	comm	department
7	POLK	TECH	6	1997-09-22 00:00:00	25000.00	HAS	4
8	GRANT	ENGINEER	10	1997-03-30 00:00:00	32000.00	HAS	2
9	JACKSON	CEO	HAS	1990-01-01 00:00:00	75000.00	HAS	4
10	FILLMORE	MANAGER	9	1994-08-09 00:00:00	56000.00	HAS	2
11	ADAMS	ENGINEER	10	1996-03-15 00:00:00	34000.00	HAS	2
12	WASHIN...	ADMIN	6	1998-04-16 00:00:00	18000.00	HAS	4
13	MONROE	ENGINEER	10	2000-12-03 00:00:00	30000.00	HAS	2
14	ROOSEVELT	CPA	9	1995-10-12 00:00:00	35000.00	HAS	1
•	HAS	HAS	HAS	HAS	HAS	HAS	HAS

On the right, the 'SQL Additions' panel is visible with a note: 'Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.' Below it, the 'Action Output' pane lists the following history:

#	Time	Action	Message	Duration / Fetch
3	03:24:06	CREATE TABLE newhire(empno INT PRIMARY KEY, ename VARCHAR(10), job VARCHAR...	Error Code: 1046. No database selected Select the default DB to be used by double-clicking ...	0.016 sec
4	03:24:09	CREATE TABLE newhire(empno INT PRIMARY KEY, ename VARCHAR(10), job VARCHAR...	Error Code: 1046. No database selected Select the default DB to be used by double-clicking ...	0.000 sec
5	03:24:25	CREATE TABLE newhire(empno INT PRIMARY KEY, ename VARCHAR(10), job VARCHAR...	0 row(s) affected	0.031 sec
6	03:24:42	SELECT * FROM newhire LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
7	03:25:05	INSERT INTO newhire (empno, ename, job, manager, hiredate, salary, comm, department) V...	14 row(s) affected Records: 14 Duplicates: 0 Warnings: 0	0.000 sec
8	03:25:18	SELECT * FROM newhire LIMIT 0, 1000	14 row(s) returned	0.000 sec / 0.000 sec

Populated my data by running `SELECT * FROM newhire;`



Connecting QuickSight and RDS

To connect my RDS instance to QuickSight, I need to change the security group first and make it access it from anywhere any ip 0.0.0.0 later need to create a quick sight and connect the data base in data set option

This solution is risky because our RDS instance is publicly available.

A better strategy

First, I made a new security group so that our data base is more secure

I connected my new security group to QuickSight by account option add VPC Connection and selected the VPC of our AWS account the security group and the default subnets available



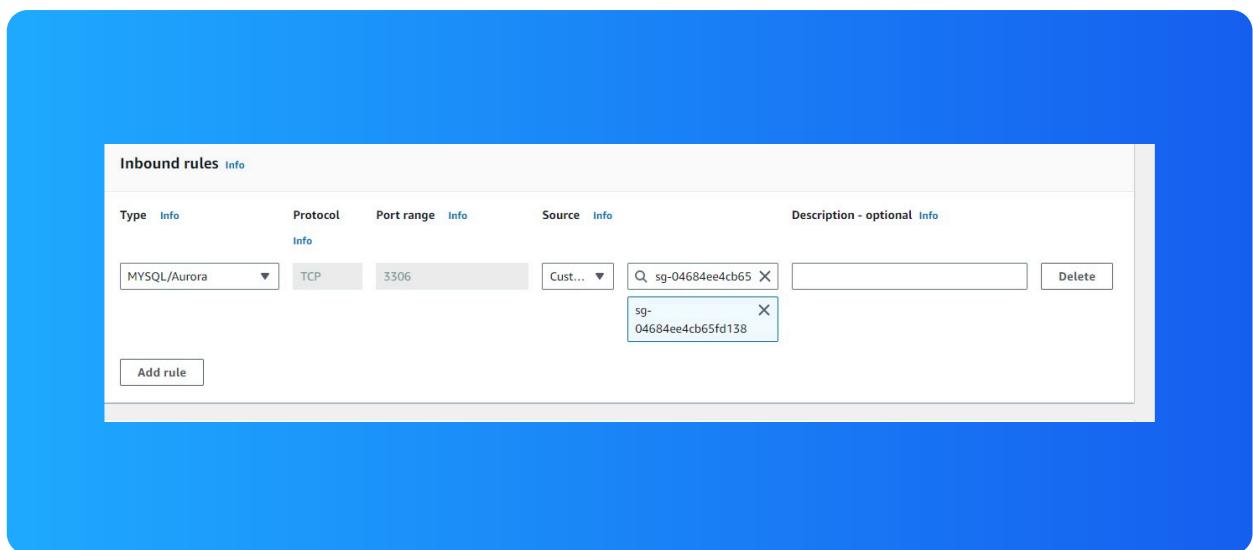
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Now to secure my RDS instance

To make my RDS instance secure I created a new security group and provided an inbound rule

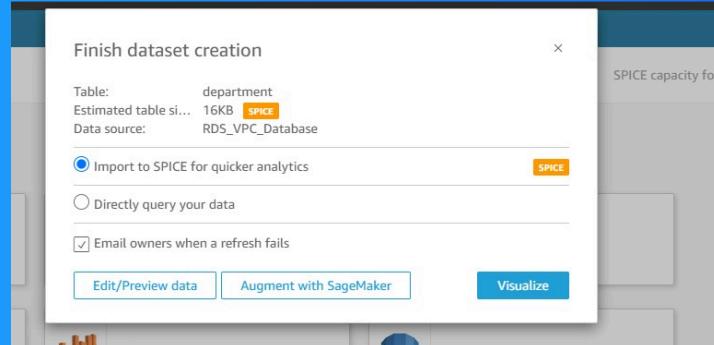
I made sure that my RDS instance could be accessed from QuickSight by adding RDS security group and inbound rule to allow quick sight



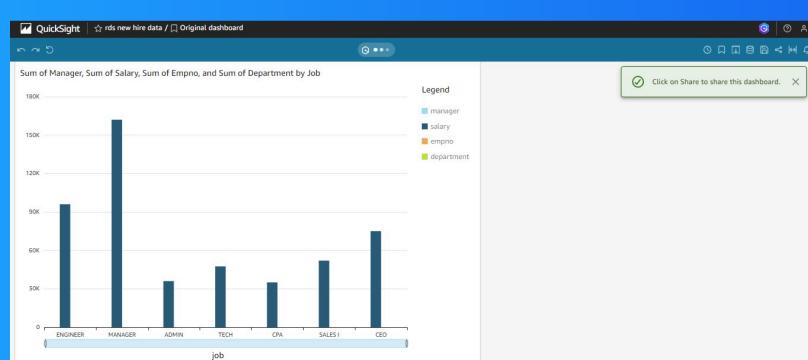
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Adding RDS as a data source for QuickSight



This data source is different from my initial data source because it is secure and not publicly available





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