



Visualise a Relational Database



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The screenshot shows a MySQL query interface with the following details:

Query 1

```
1 •  SELECT * FROM newhire;
```

Result Grid | Filter Rows: | Edit | Export/Import: | Wrap Cell Content

	empno	ename	job	manager	hiredate	salary	comm	department
1	1	ALAND	SALESREP	6	1996-01-01 00:00:00	18000.00	NULL	4
2	2	HASFORD	MANAGER	1	1996-01-01 00:00:00	20000.00	500.00	1
3	3	TAFF	SALES1	2	1996-01-07 00:00:00	25000.00	2000.00	3
4	4	HOVER	SALES1	2	1996-04-02 00:00:00	23000.00	NULL	3
5	5	LINCOLN	TECH	6	1994-06-23 00:00:00	22500.00	1400.00	4
6	6	GARFIELD	MANAGER	9	1993-05-01 00:00:00	54000.00	NULL	4
7	7	POLK	TECH	6	1997-09-22 00:00:00	25000.00	NULL	4
8	8	GRANT	ENGINEER	10	1997-03-30 00:00:00	32000.00	NULL	2
9	9	JACKSON	TEC	NULL	1994-01-01 00:00:00	75000.00	NULL	2
10	10	FILMOR	MANAGER	6	1995-03-01 00:00:00	28000.00	2000.00	4
11	11	ADAMS	ENGINEER	10	1996-03-15 20:00:00	54000.00	NULL	2
12	12	WASHIN...	ADMIN	6	1998-04-16 00:00:00	18000.00	NULL	4
13	13	MONROE	ENGINEER	10	2000-12-03 00:00:00	30000.00	NULL	2
14	14	ROOSEVELT	CPA	9	1995-10-12 00:00:00	35000.00	NULL	1
	MAX	MIN	Avg	NULL	NULL	NULL	NULL	NULL



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Introducing Today's Project!

What is Amazon RDS?

a fully managed cloud database service provided by AWS that simplifies the process of setting up, operating, and scaling relational databases,AWS automatically applies patches to the database software and operating system, ensuring your database

How I used Amazon RDS in this project

It was exciting cause it kept on giving me new obstacles

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

Nothing much

This project took me...

45 minutes tops



In the first part of my project...

Creating a Relational Database

I created my relational database by using Quicksight data base for excel.

Configuration

Engine type [Info](#)

- Aurora (MySQL Compatible)
- Aurora (PostgreSQL Compatible)
- MySQL
- PostgreSQL
- MariaDB
- Oracle
- Microsoft SQL Server

Edition

MySQL Community

DB instance size

- Production
 - db.r6g.xlarge
 - 4 vCPUs
 - 32 GiB RAM
 - 500 GiB
 - 1.017 USD/hour
- Dev/Test
 - db.r6g.large
 - 2 vCPUs
 - 16 GiB RAM
 - 100 GiB
 - 0.231 USD/hour
- Free tier
 - db.t4g.micro
 - 2 vCPUs
 - 1 GiB RAM
 - 20 GiB
 - 0.019 USD/hour



Understanding Relational Databases

A relational database is a type of database that organizes data into tables (also known as relations) which can be linked—or related—based on common data fields.

MySQL vs SQL

The difference between MySQL and SQL is the language used to interact with databases, and MySQL is a specific system that implements SQL to manage and manipulate databases.



Populating my RDS instance

'The first thing I did was make my RDS instance public because'...Making an Amazon RDS (Relational Database Service) instance public means that it can be accessed from outside the AWS network.

I had to update the default security group for my RDS schema because we need the SQL workbench to work for it to be public so there is inbound traffic.

The screenshot shows the 'Edit inbound rules' dialog box. It displays two existing rules:

- sgr-0e8a5e72da9625a0e**: Type: All traffic, Protocol: All, Port range: All, Source: Cu..., Description: SG-0d639da42e30c8f50. This rule has been deleted, as indicated by the red box around the 'Delete' button.
- : Type: All TCP, Protocol: TCP, Port range: 0 - 65535, Source: My..., Description: 94.10.141.111/32. This rule is still active.

At the bottom of the dialog, there are buttons for 'Add rule', 'Cancel', 'Preview changes', and 'Save rules'.



Using MySQL Workbench

The screenshot shows the MySQL Workbench interface with a query editor window titled "Query 1". The query is:

```
1 • SELECT * FROM newhire;
```

The results grid displays 14 rows of data from the "newhire" table:

empno	ename	job	manager	hiredate	salary	comm	department
1	JOHNSON	ADMIN	6	1990-12-17 00:00:00	18000.00	HULL	4
2	HARDING	MANAGER	9	1990-02-02 00:00:00	52000.00	300.00	3
3	ALLEN	SALES	1	1995-01-12 00:00:00	25000.00	500.00	3
4	HOOVER	SALES	1	1995-01-12 00:00:00	25000.00	500.00	3
5	LINCOLN	TECH	6	1995-06-23 00:00:00	25000.00	500.00	4
6	GARFIELD	MANAGER	9	1995-05-01 00:00:00	54000.00	HULL	4
7	POLK	TECH	6	1997-09-22 00:00:00	25000.00	HULL	4
8	GRANT	ENGINEER	10	1997-03-30 00:00:00	32000.00	HULL	2
9	JACKSON	CEO	HULL	1990-01-01 00:00:00	75000.00	HULL	4
10	FILLMORE	MANAGER	9	1994-08-09 00:00:00	56000.00	HULL	2
11	WILSON	MANAGER	9	1995-03-15 00:00:00	34000.00	HULL	2
12	WASHING...	ADMIN	6	1995-04-16 00:00:00	18000.00	HULL	4
13	MONROE	ENGINEER	10	2000-12-03 00:00:00	30000.00	HULL	2
14	ROOSEVELT	CPA	9	1995-05-10 12 00:00:00	35000.00	HULL	1

To populate my database I Use the MySQL command line or a GUI tool like MySQL Workbench to create a new database.



Connecting QuickSight and RDS

To connect my RDS instance to QuickSight I started with making sure my regions are the same then created a inbound rule that allowed all traffic

This solution is risky because RDS instance is publicly available,

A better strategy

I made a new security group so that my data won't be encrypted.

I connected my new security group to QuickSight by QuickSight uses VPC peering or VPC endpoints to securely access data sources within a VPC. The security groups must allow inbound and outbound traffic to/from QuickSight.



Now to secure my RDS instance

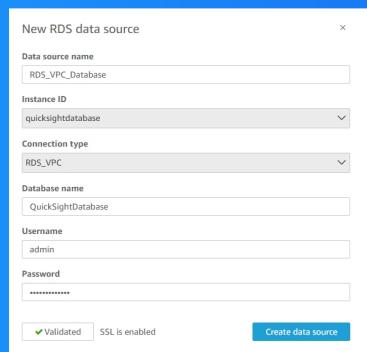
To make my RDS instance secure I'Keep the RDS instance in private subnets,Limit access with security groups and only allow necessary traffic.

I made sure that my RDS instance could be accessed from QuickSight by'Make the RDS instance private (no public access). Create security groups for both RDS and QuickSight, ensuring proper access permissions. Modify the RDS security group to allow

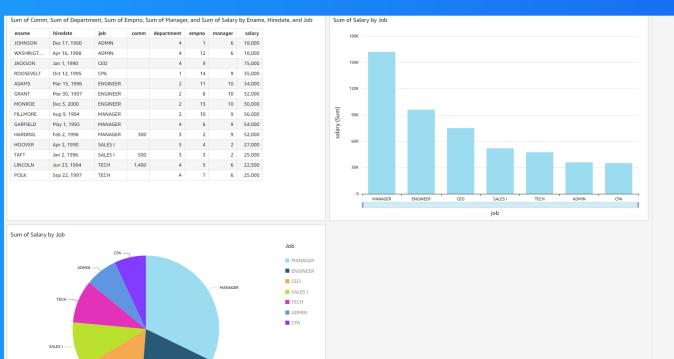
The screenshot shows the 'Create security group' wizard. In the 'Basic details' step, the security group name is 'RDS_SecGrp'. The 'Description' is 'Security Group that contains RDS'. The 'VPC' is 'vpc-045d367e1f97ca62b'. In the 'Inbound rules' step, there is one rule: 'MySQL/Aurora' (Type), 'TCP' (Protocol), port range '3306' (Port range), 'Custom' (Source), and two entries in the 'Description - optional' field: 'sg-0ba3c0d7984446ca' and 'sg-0ba3c0d7984446ca'. There is also an 'Add rule' button.



Adding RDS as a data source for QuickSight



This data source is different from my initial data source because previously, my data was not function or even secure.





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