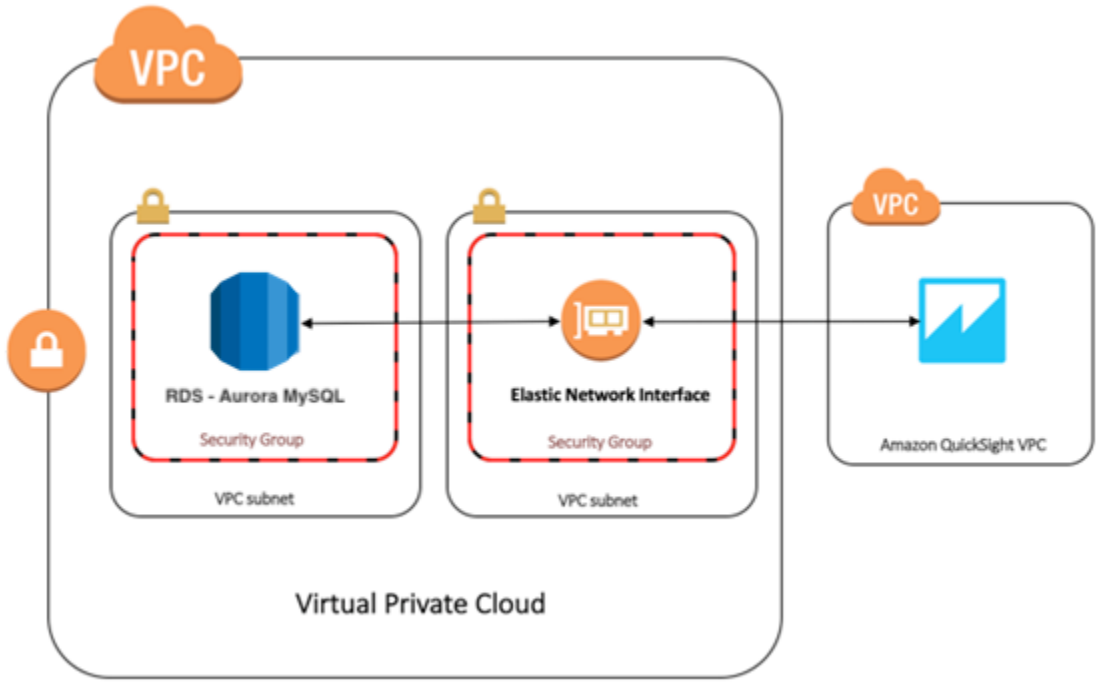
Visualizing data in Amazon RDS for SQL Server using Amazon QuickSight

Amazon RDS Server
Amazon Relational Database Service is a distributed relational database service by Amazon Web Services. It is a web service running "in the cloud" designed to simplify the setup, operation, and scaling of a relational database for use in applications.

Amazon QuickSight
Amazon QuickSight allows everyone in your organization to understand your data by asking questions in natural language, exploring through interactive dashboards, or automatically looking for patterns and outliers powered by machine learning.

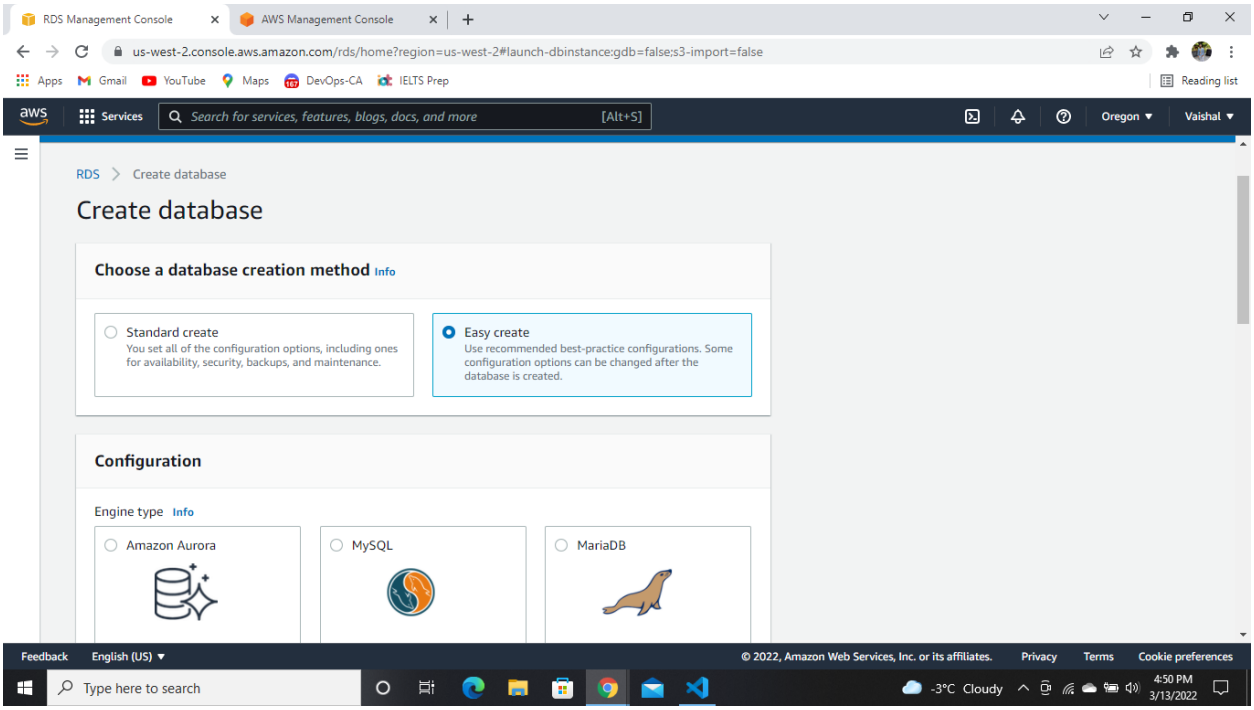
Architectural Diagram:



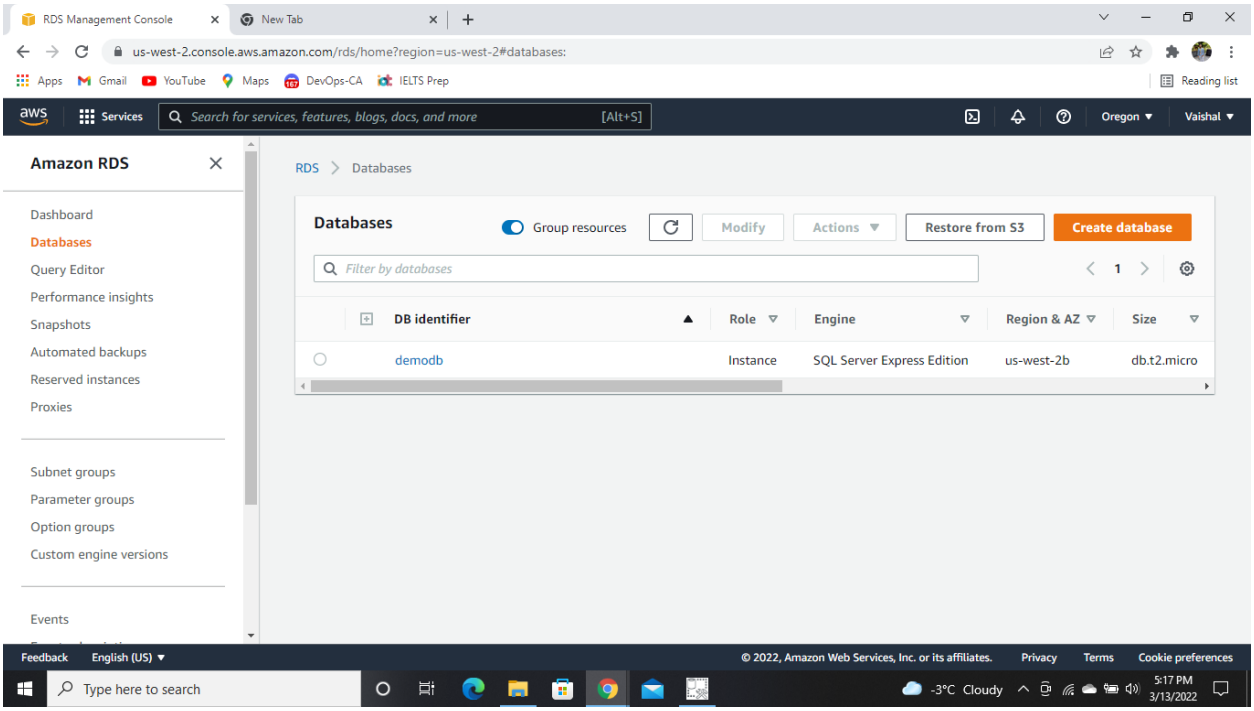
STEP involved in setup:

- Create a Microsoft SQL Server Express Edition database in Amazon RDS.
- Download and connect to a Microsoft SQL Server client.
- Create a sample database and tables, and load sample data to be accessed in Amazon QuickSight.
- Enable the security groups on Amazon RDS for Amazon QuickSight to connect to RDS datasets.
- Create an Amazon QuickSight account.
- Enable Amazon QuickSight to connect to Amazon RDS and create a dataset for visualization.

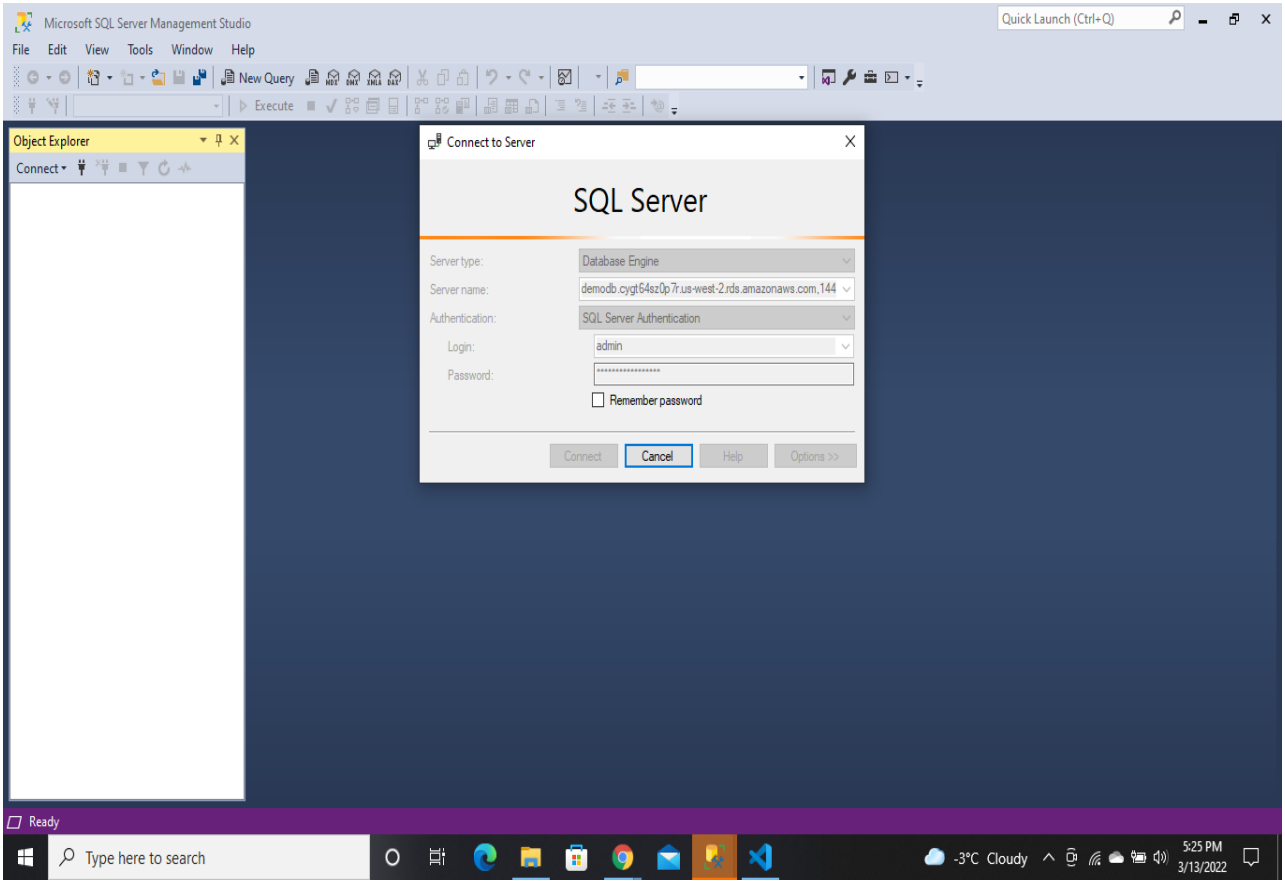
Firstly, Amazon RDS MS-SQL Server is created with an easy create option. As shown in the image below.



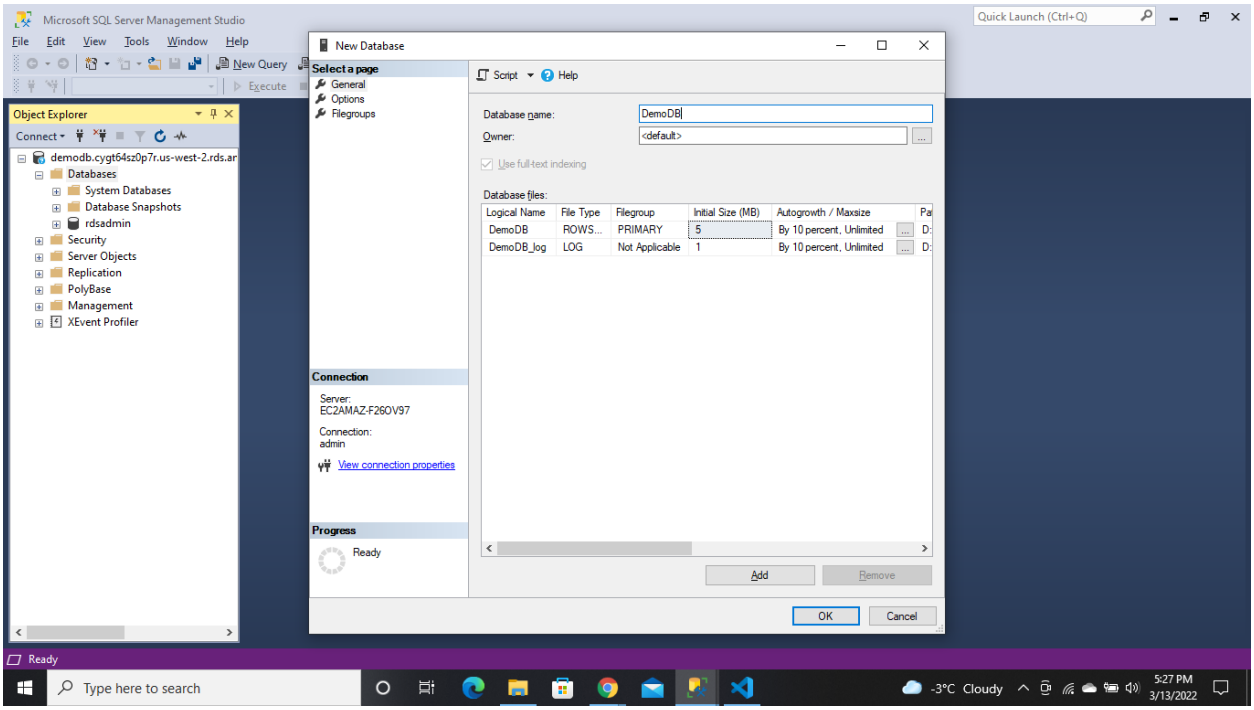
After successfully configuring with desired configuration, it is deployed and running as shown in the image below.



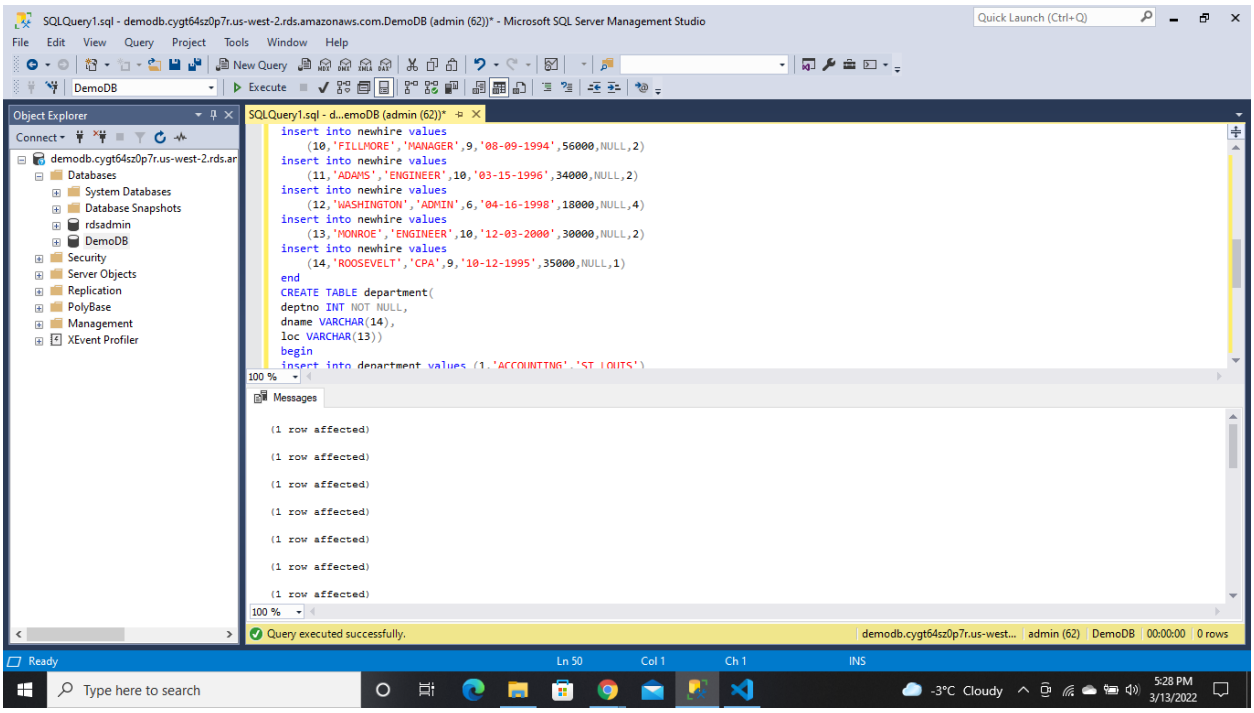
To connect to the MS-SQL Server from the local machine, one needs to make a tunnel or enable the public access of the RDS machine. For this demo, I have enabled public access and download the MS-SQL Client to connect with the database.
Once the download completes, input the required credentials as show in the image below and one will be able to connect to RDS Server.



After connecting to the RDS Server, I simply created a new Database named DemoDB, as show in image below.

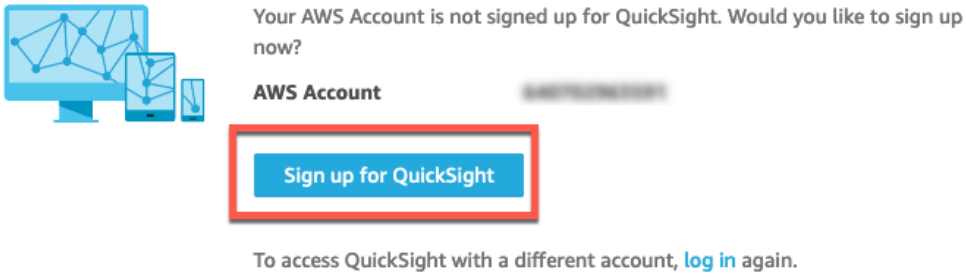


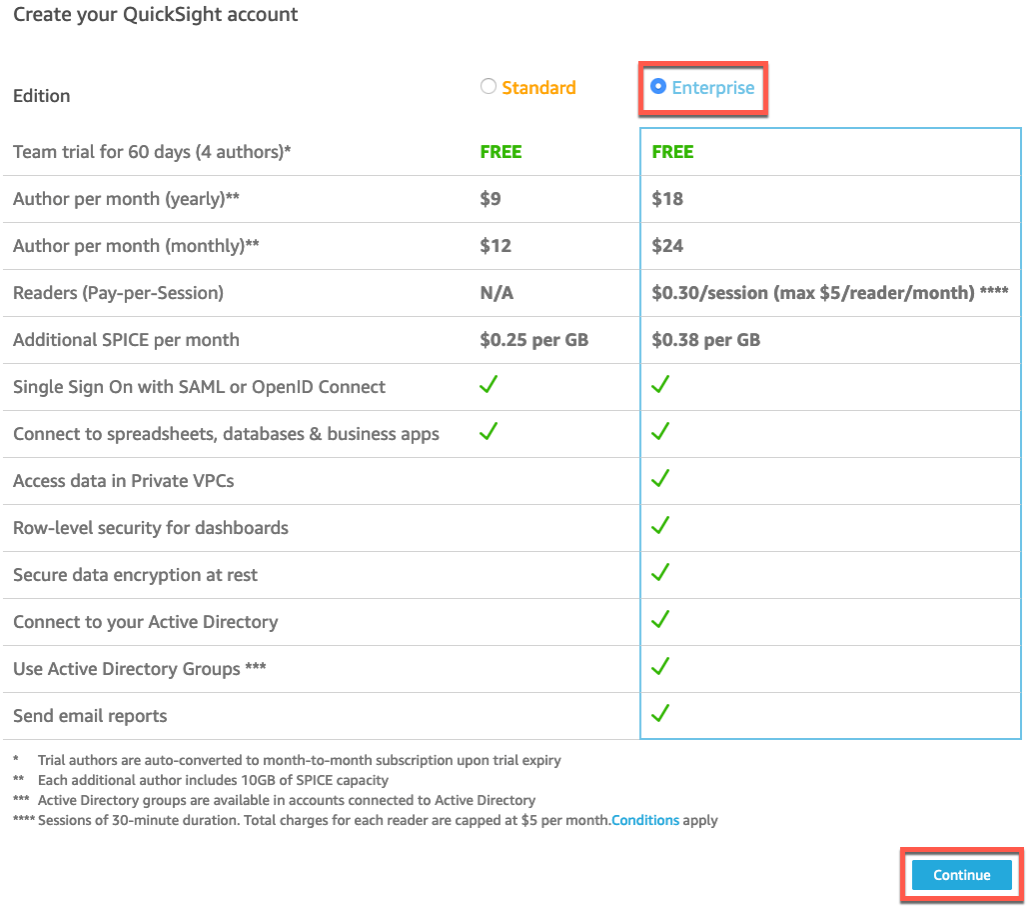
After the creation of the database, I inserted some dummy data into the database as shown the image below.

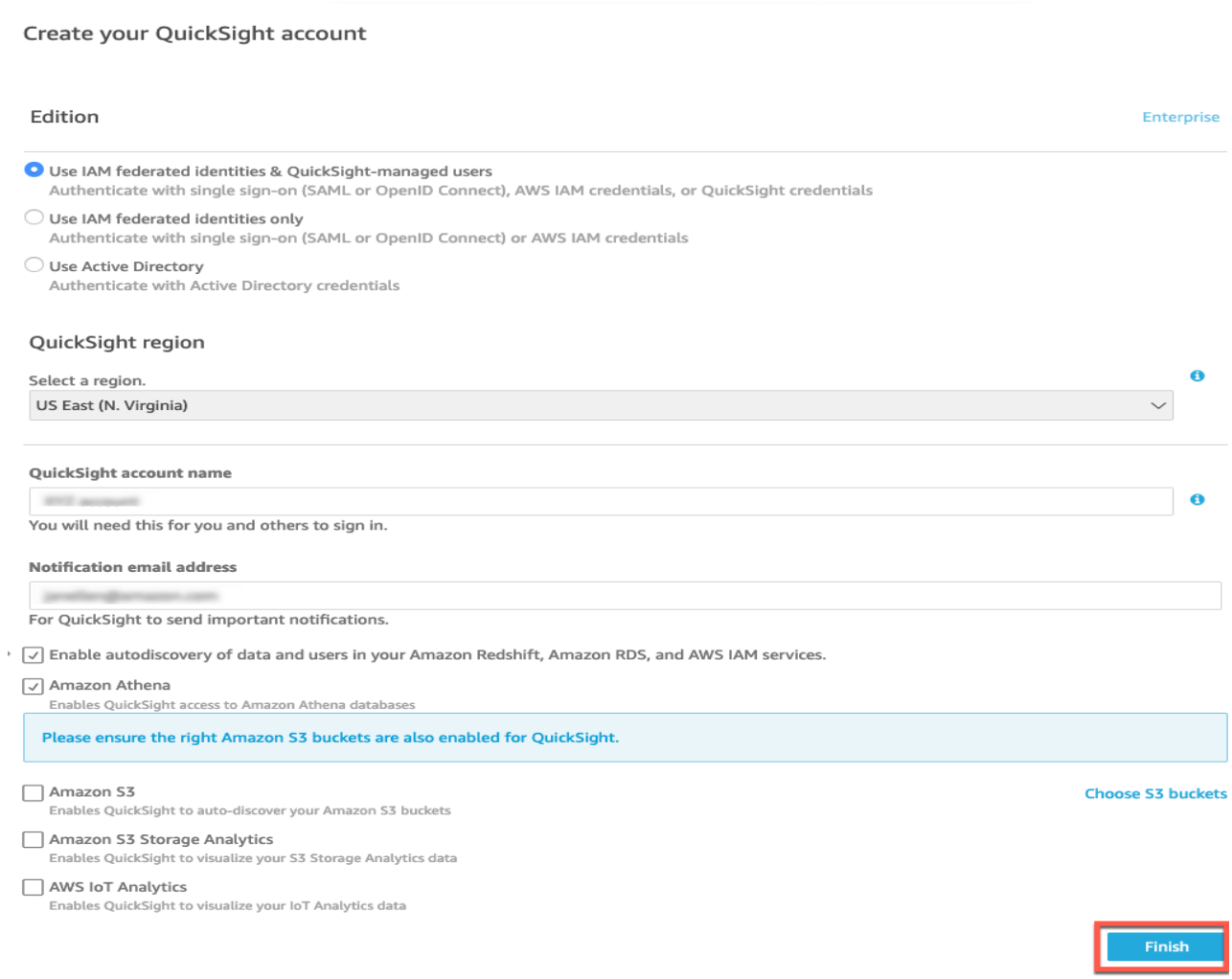


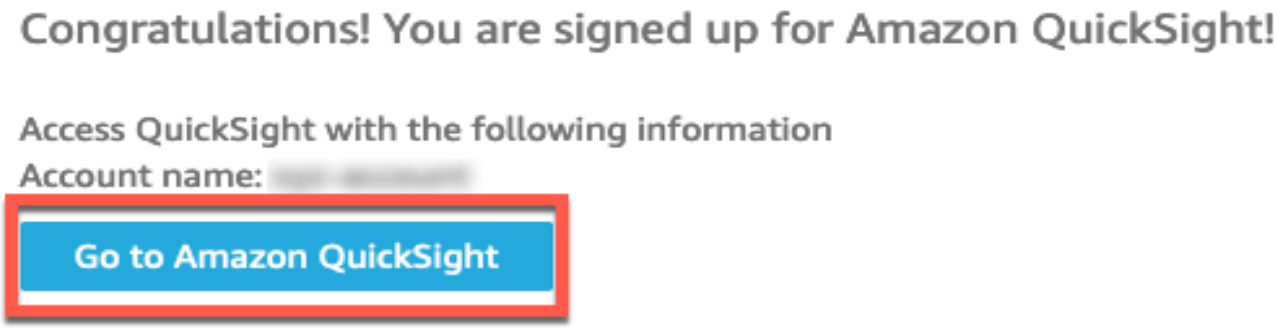
Once the data is inserted into the database, It's time to configure the Amazon QuickSight to read the data from the database and make it visually available.

There are several steps involved in setting up QuickSight service as shown in the images below.

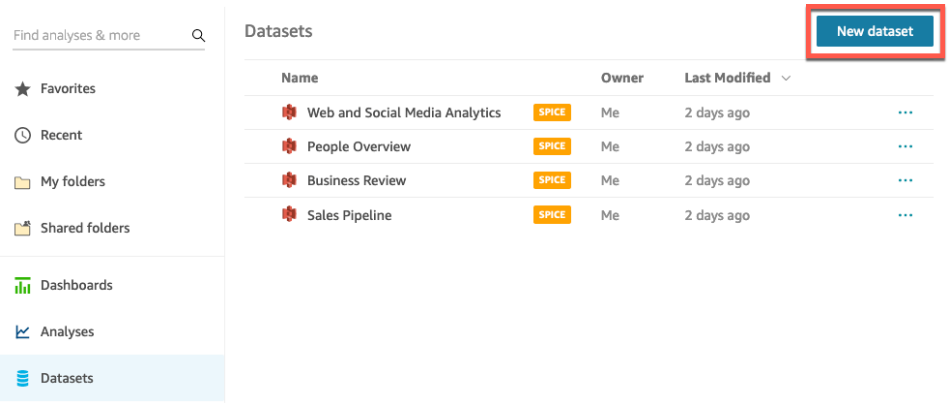


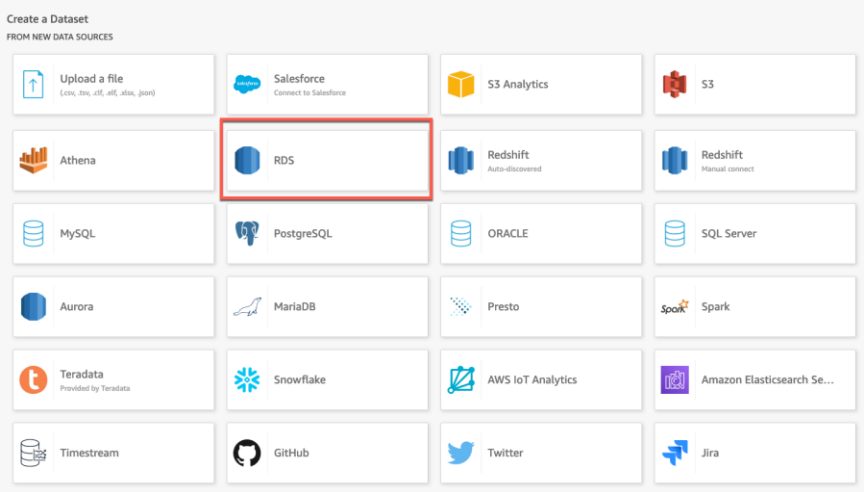



Create your QuickSight account
Edition
Enterprise
Use IAM federated identities & QuickSight-managed users
Authenticate with single sign-on (SAML or OpenID Connect), AWS IAM credentials, or QuickSight credentials
Use IAM federated identities only
Authenticate with single sign-on (SAML or OpenID Connect) or AWS IAM credentials
Use Active Directory
Authenticate with Active Directory credentials
QuickSight region
Select a region.
US East (N. Virginia)
QuickSight account name
You will need this for you and others to sign in.
Notification email address
For QuickSight to send important notifications.
Enable autodiscovery of data and users in your Amazon Redshift, Amazon RDS, and AWS IAM services.
Amazon Athena
Enables QuickSight access to Amazon Athena databases
Please ensure the right Amazon S3 buckets are also enabled for QuickSight.
Amazon S3
Enables QuickSight to auto-discover your Amazon S3 buckets
Choose S3 buckets
Amazon S3 Storage Analytics
Enables QuickSight to visualize your S3 Storage Analytics data
AWS IoT Analytics
Enables QuickSight to visualize your IoT Analytics data
Finish

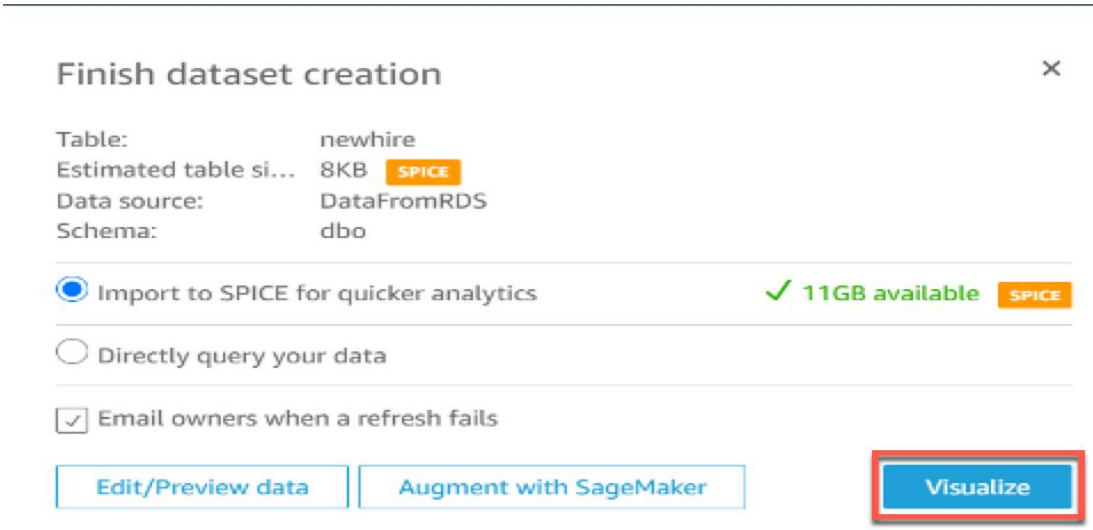

Congratulations! You are signed up for Amazon QuickSight!
Access QuickSight with the following information
Account name:
Go to Amazon QuickSight

After successfully creating the QuickSight service, we need to connect our Database to the QuickSight. It is shown in the images attached below.

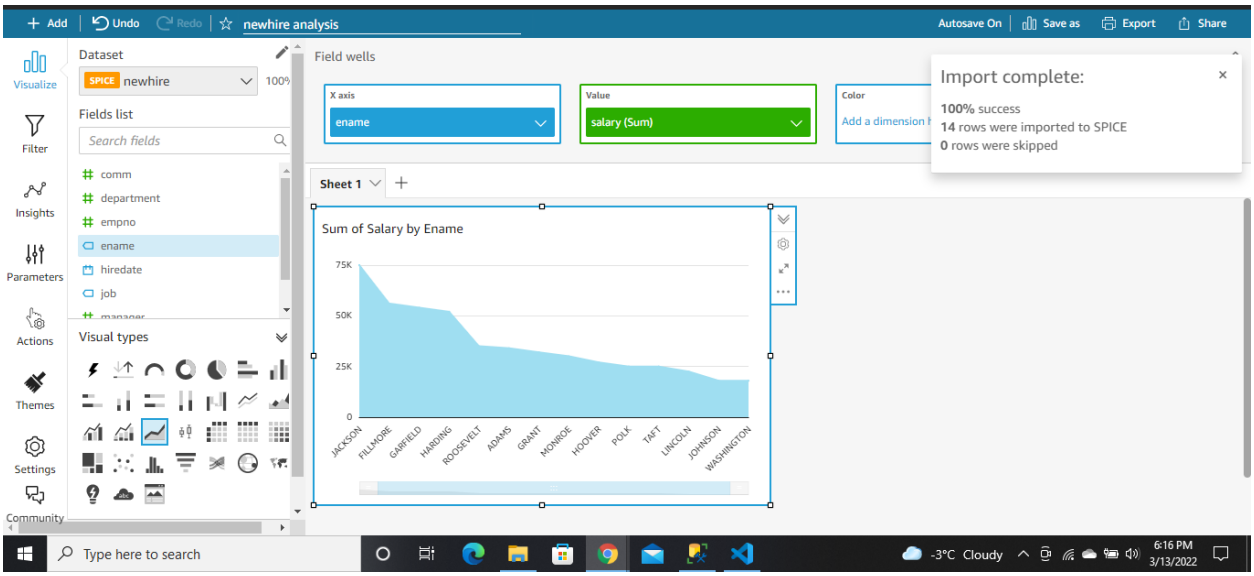


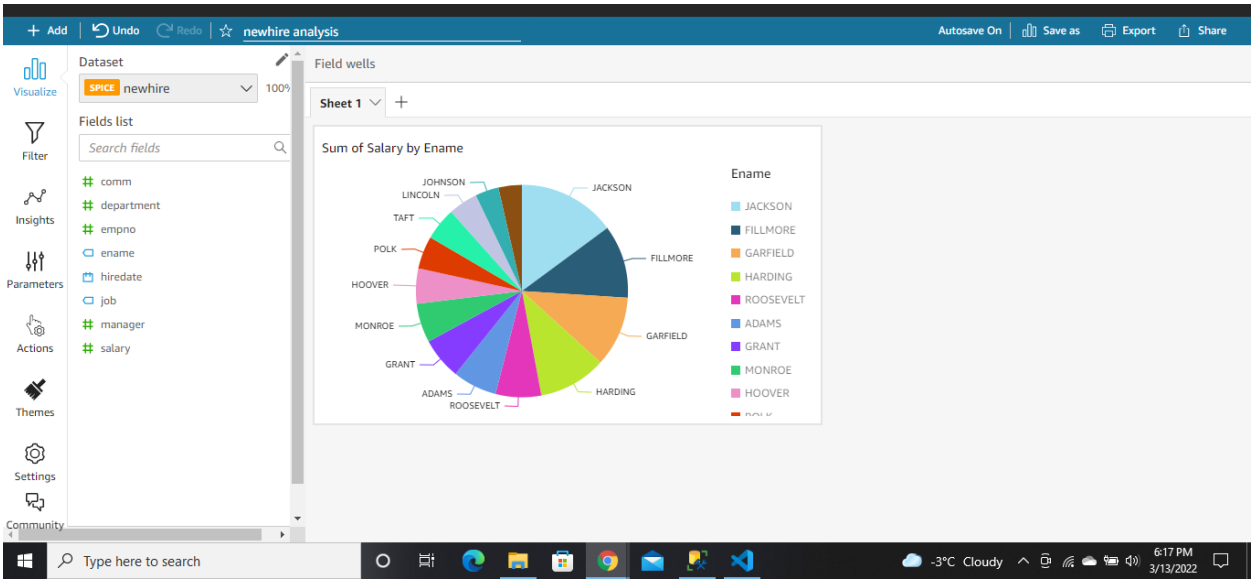


Once the RDS is selected as shown in the image above, we then need to connect to the running database. Because of privacy concerns the next step is skipped where the details of the database and its connection using the credentials is configured. After the connection is made and data is imported into QuickSight, we get the confirmation as shown in the image below.



Once the database is connected successfully, we can click on visualize after configuring the dataset.
Once it's done, we can make our own dashboard and visualize the data as per our own needs.
Below attached images shows how data is being visualized in the QuickSight Dashboard.





Happy Visualizing...!!

Thank You,
Vaishal Shah