Experiment No.   6

Aim: To study and Implement Database as a Service on SQL/NOSQL databases like AWS RDS, AZURE SQL/ MongoDB Lab/ Firebase.

Objective: To learn concept of DBaaS and implement using Own Cloud which gives universal access to files through a web interface.

Theory:

- Database as a Service (DBaaS) is self service/ on demand database consumption coupled with automation of operations.
- Cloud computing services are like pay per use so DBaaS also based on same payment structure like how much you will use just pay for your usage.
- This DBaaS provides same function as like standard traditional and relational database models. So using DBaaS, organizations can avoid data base configuration, management, upgradation and security.
- A fully managed info service helps to line up, manage, and administer your info within the cloud and conjointly offer services for hardware provisioning and Backup.
- DBaaS permits the availability of info's effortlessly to Database shoppers from numerous backgrounds and IT expertise.
- Provides on demand services.
- Supported the resources offered, it delivers a versatile info platform that tailors itself to the environment's current desires.
- A team of consultants at your disposal, endlessly watching the Databases.
- Automates info administration and watching.
- Leverages existing servers and storage

- Advantages of DBaaS :

  - DBaaS is responsible of the info supplier to manage and maintain info hardware and code.
  - The hefty power bills for ventilation and cooling bills to stay the servers running area unit eliminated.
  - An organization that subscribes to DBaaS is free from hiring info developers or constructing a info system in-house.
  - Make use of the most recent automation, straightforward outs of clouds area unit possible at low price and fewer time.
  - Human resources needed to manage the upkeep of the system is eliminated.
  - Since DBaaS is hosted off-site, the organization is free from the hassles of power or network failure.
  - Explore the portfolio of Oracle info as a service.
- Disadvantages of DBaaS :

  - Traditional enterprises may have objections to cloud-based services generally.
  - In case of significant failure of the DBaaS server or network, the organization might lose its knowledge.

- Companies already equipped with resources and IT-related human resources might not realize DBaaS solutions economically viable.
- Intrinsic network connected problems with cloud can impact the performance of a DBaaS.
- Features offered within the typical RDBMS might not perpetually be offered during a DBaaS system.
- The use of DBaaS may result in revenue loss in alternative areas of code updates and hardware management.

Steps:

Step1 : Login to aws console and search RDS

Step2: Click on to RDS and create database

Step 3: Select standard database

Step 4: Select MySQL and MySQL Community edition

Step 5:In Templates select Free tier

Step 6: Mention database name (default is database1) and username and password

Step 7: Instance is t2.micro

Step 8: Select Public Acess -Yes

Step 9: Click on to create Database

Step 10: It will take some time

Step 11: Go to google type mysql workbench

Step 12: Click on to download

Step 13: MySQL community download – Microsoft Windows

Step 14: Click on to – No thanks , just download

Step 15: Go to downloads of your machine and install it with default settings

Check your database is created and status is available

Step 16: Click on to view credential

Step 17: Click on to database

Step 18: Copy Endpoint

Step 19: Go back to workbench

Step 20: Click on to mysql connection

Step 21: Paste copied endpoint in Hostname Connection Name : databaseShilpa Username : admin Click on to Test Connection

Enter admin password

Step 22: Go to vpc security group

Step 23: Click on to inbound rules

Step 24: First select Click on to Edit inbound rule add rule select ipv4 --all traffic (add 0.0.0.0./0) and save Rules (important step to add inbound rule)

Step 25: Goto workbench (after giving details click on to Test Connection)

Click on Ok button Go to workbench double click on connection(databaseshilpa)

It will get opened

Step 26: Write query and execute Create database tsec; Use tsec; Show tables

Create table for eg: create table student(roll int, name varchar(10), city varchar(10));

Describe student

insert into student values(1,'shilpa','thane'); (Perform all CURD) operations)

Step 27: Now delete the instance (once you have done with it) Select instance go to action stop instance and then delete instance

Uncheck create final shapshot

Output/Observation:

Conclusion: Comment on database as a service in Amazon Web Services (AWS).