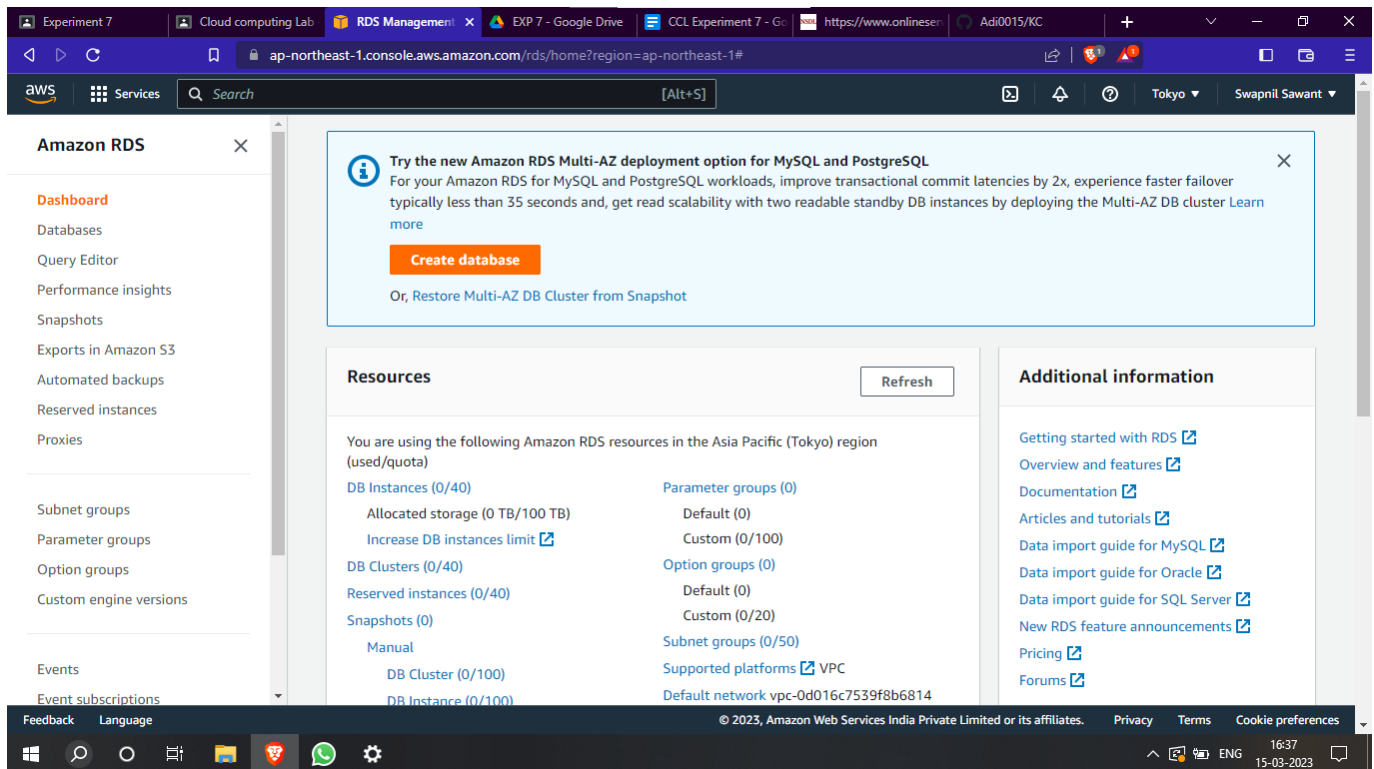


Name : Swapnil Sawant
Division : TE4
Roll No : 46
Batch : C
Subject : CCL

EXPERIMENT NO 7

Aim : To Study and implement Database as a service on SQL/NOSQL.

Diagram :



Experiment 7 Cloud computing Lab - FH RDS Management Con EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesCreate...

aws Services Search [Alt+S] Tokyo Swapnil Sawant

Now, create a database with a single click using our pre-built configurations! Or choose your own configurations.

Create database

RDS > Create database

Choose a database creation method Info

☒ **Standard create**
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

☐ **Easy create**
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type Info

☐ Aurora (MySQL Compatible)

☐ Aurora (PostgreSQL Compatible)

☒ **MySQL**

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

Experiment 7 Cloud computing Lab - FH RDS Management Con EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesCreate...

aws Services Search [Alt+S] Tokyo Swapnil Sawant

▼ Hide filters

☒ **Show versions that support the Multi-AZ DB cluster Info**
Create a Multi-AZ DB cluster with one primary DB instance and two readable standby DB instances. Multi-AZ DB clusters provide up to 2x faster transaction commit latency and automatic failover in typically under 35 seconds.

☒ **Show versions that support the Amazon RDS Optimized Writes Info**
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine Version

MySQL 8.0.28

Templates

Choose a sample template to meet your use case.

☐ **Production**
Use defaults for high availability and fast, consistent performance.

☐ **Dev/Test**
This instance is intended for development use outside of a production environment.

☒ **Free tier**
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. Info

Availability and durability

PostgreSQL is a powerful, open-source object-relational database system with a strong reputation of reliability, stability, and correctness.

- High reliability and stability in a variety of workloads.
- Advanced features to perform in high-volume environments.
- Vibrant open-source community that releases new features multiple times per year.
- Supports multiple extensions that add even more functionality to the database.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

Experiment 7 Cloud computing Lab - FH RDS Management Con EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesC...

aws Services Search [Alt+S]

Availability and durability

Deployment options Info

The deployment options below are limited to those supported by the engine you selected above.

- ☐ Multi-AZ DB Cluster - new
Creates a DB cluster with a primary DB instance and two readable standby DB instances, with each DB instance in a different Availability Zone (AZ). Provides high availability, data redundancy and increases capacity to serve read workloads.
- ☐ Multi-AZ DB instance (not supported for Multi-AZ DB cluster snapshot)
Creates a primary DB instance and a standby DB instance in a different AZ. Provides high availability and data redundancy, but the standby DB instance doesn't support connections for read workloads.
- ☒ Single DB instance (not supported for Multi-AZ DB cluster snapshot)
Creates a single DB instance with no standby DB instances.

Settings

DB instance identifier Info

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

database-1

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

▼ Credentials Settings

Master username Info

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

15-03-2023 16:47

Experiment 7 Cloud computing Lab - FH RDS Management Con EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesC...

aws Services Search [Alt+S]

Amazon RDS can generate a password for you, or you can specify your own password.

Master password Info

.....

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), ' (single quote), " (double quote) and @ (at sign).

Confirm master password Info

.....

Instance configuration

The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class Info

- ☐ Standard classes (includes m classes)
- ☐ Memory optimized classes (includes r and x classes)
- ☒ Burstable classes (includes t classes)

db.t3.micro
2 vCPUs 1 GiB RAM Network: 2,085 Mbps

☐ Include previous generation classes

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

15-03-2023 16:48

Experiment 7 Cloud computing Lab - FH RDS Management Con x EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesCreate...

aws Services Search [Alt+S] Tokyo Swapnil Sawant

Storage

Storage type [Info](#)

General Purpose SSD (gp2)
Baseline performance determined by volume size

Allocated storage [Info](#)

20 GiB
The minimum value is 20 GiB and the maximum value is 6,144 GiB

Storage autoscaling [Info](#)

Provides dynamic scaling support for your database's storage based on your application's needs.

☒ **Enable storage autoscaling**
Enabling this feature will allow the storage to increase after the specified threshold is exceeded.

Maximum storage threshold [Info](#)

Charges will apply when your database autoscales to the specified threshold

1000 GiB
The minimum value is 22 GiB and the maximum value is 6,144 GiB

Connectivity [Info](#) [Refresh](#)

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

16:51 15-03-2023

Experiment 7 Cloud computing Lab - FH RDS Management Con x EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesCreate...

aws Services Search [Alt+S] Tokyo Swapnil Sawant

Connectivity

Compute resource

Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.

☒ **Don't connect to an EC2 compute resource**
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.

☐ **Connect to an EC2 compute resource**
Set up a connection to an EC2 compute resource for this database.

Network type [Info](#)

To use dual-stack mode, make sure that you associate an IPv6 CIDR block with a subnet in the VPC you specify.

☒ **IPv4**
Your resources can communicate only over the IPv4 addressing protocol.

☐ **Dual-stack mode**
Your resources can communicate over IPv4, IPv6, or both.

Virtual private cloud (VPC) [Info](#)

Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

Default VPC (vpc-0d016c7539f8b6814)

Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change its VPC.

DB subnet group [Info](#)

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

16:52 15-03-2023

Experiment 7 Cloud computing Lab - FH RDS Management Con x EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesCreate...

aws Services Search [Alt+S]

Database authentication

Database authentication options Info

- ☒ Password authentication
Authenticates using database passwords.
- ☐ Password and IAM database authentication
Authenticates using the database password and user credentials through AWS IAM users and roles.
- ☐ Password and Kerberos authentication
Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.

Monitoring

Monitoring

- ☐ Enable Enhanced monitoring
Enabling Enhanced monitoring metrics are useful when you want to see how different processes or threads use the CPU.

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

16:53 15-03-2023

Experiment 7 Cloud computing Lab - FH RDS Management Con x EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false;isHermesCreate...

aws Services Search [Alt+S]

Additional configuration

Database options, encryption turned on, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.

Database options

Initial database name Info

db_ss

If you do not specify a database name, Amazon RDS does not create a database.

DB parameter group Info

default:mysql8.0

Option group Info

default:mysql-8-0

Backup

- ☒ Enable automated backups
Creates a point-in-time snapshot of your database

Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to details [here](#).

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

16:54 15-03-2023

Experiment 7Cloud computing Lab - FH...RDS Management Con...EXP 7 - Google DriveCCL Experiment 7 - Googlehttps://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#launch-dbinstance:gdb=false:isHermesCreate...

awsServicesSearch[Alt+S]

Deletion protection

☐ Enable deletion protection
Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro, db.t3.micro or db.t4g.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

[Learn more about AWS Free Tier.](#)

When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page.](#)

You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.

CancelCreate database

FeedbackLanguage© 2023, Amazon Web Services India Private Limited or its affiliates. PrivacyTermsCookie preferences

Experiment 7Cloud computing Lab - FH...RDS Management Con...EXP 7 - Google DriveCCL Experiment 7 - Go...https://www.onlineservices...

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#databases:

awsServicesSearch[Alt+S]

Amazon RDS

Dashboard

Databases

Query Editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Events

Event subscriptions

Successfully created database database-1

View connection details

How was your experience creating an Amazon RDS database? [Provide feedback](#)

RDS > Databases

Consider creating a Blue/Green Deployment to minimize downtime during upgrades

You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. [RDS User Guide](#) [Aurora User Guide](#)

Databases

☒ Group resources

Modify

Actions

Restore from S3

Create database

Filter by databases

DB identifier	Role	Engine	Region & AZ	Size	Sta
database-1	Instance	MySQL Community	ap-northeast-1c	db.t3.micro	✓

FeedbackLanguage© 2023, Amazon Web Services India Private Limited or its affiliates. PrivacyTermsCookie preferences

Experiment 7 Cloud computing Lab - FH RDS Management Con x EXP 7 - Google Drive CCL Experiment 7 - Google https://www.onlineservices

ap-northeast-1.console.aws.amazon.com/rds/home?region=ap-northeast-1#database-id=database-1;is-cluster=false

aws Services Search [Alt+S] Tokyo Swapnil Sawant

Amazon RDS database-1

Modify Actions

Summary

DB identifier database-1	CPU 3.34%	Status Available	Class db.t3.micro
Role Instance	Current activity 0 Connections	Engine MySQL Community	Region & AZ ap-northeast-1c

Connectivity & security Monitoring Logs & events Configuration Maintenance & backups Tags

Connectivity & security

Endpoint & port Endpoint database-1.cqcvqnoyywfh.ap-northeast-1.rds.amazonaws.com Port	Networking Availability Zone ap-northeast-1c VPC vpc-0d016c7570f0b6014	Security VPC security groups default (sg-0d14d092dccbfb901) Active
--	---	--

Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences 17:11 15-03-2023

MySQL Workbench

File Edit View Database Tools Scripting Help

MySQL Connections

Filter connections

Connect to Database

Stored Connection: Select from saved connection settings

Connection Method: Standard (TCP/IP) Method to use to connect to the RDBMS

Parameters SSL Advanced

Hostname: rtheast-1.rds.amazonaws.com Port: 3306 Name or IP address of the server host - and TCP/IP port.

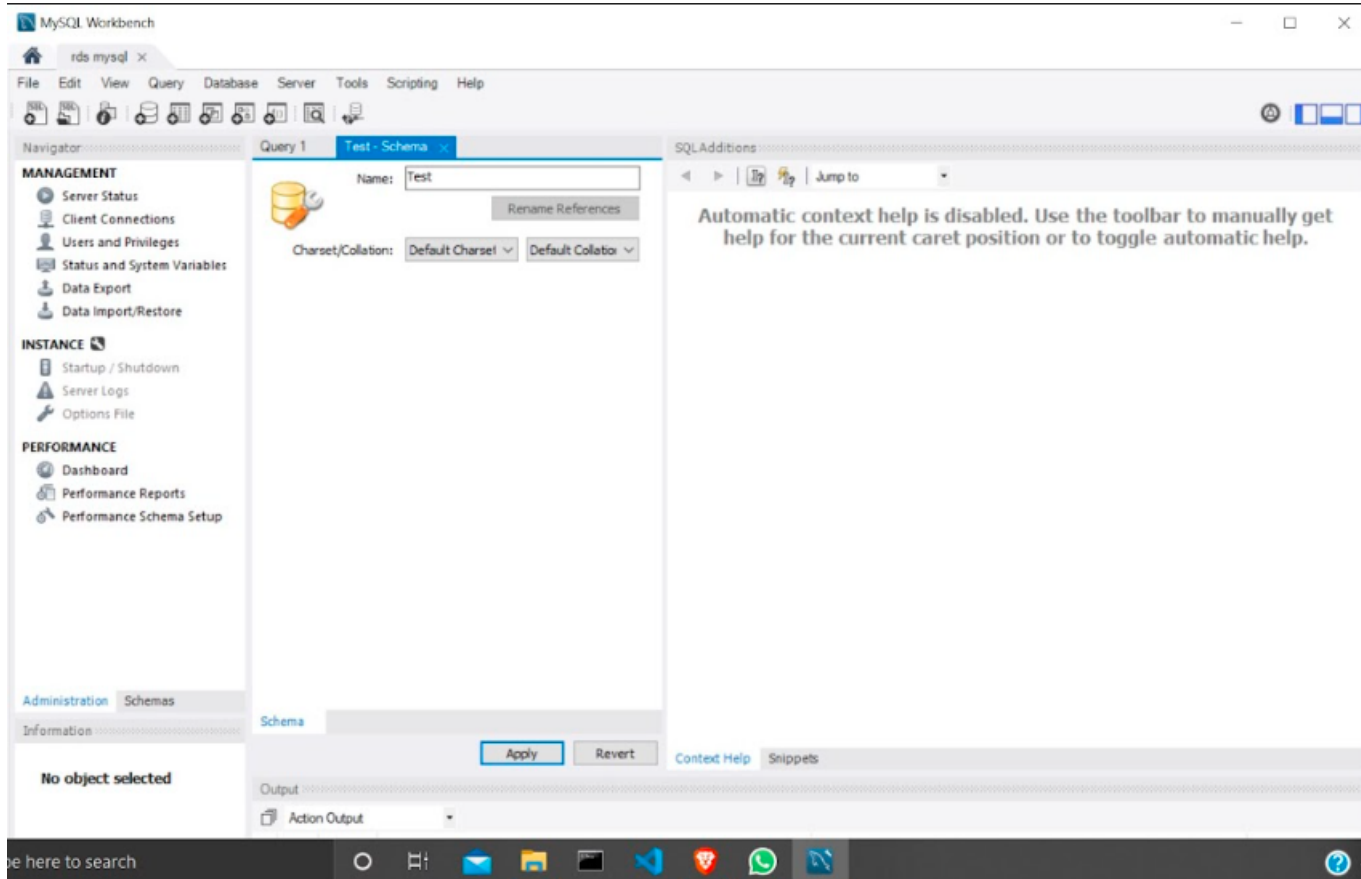
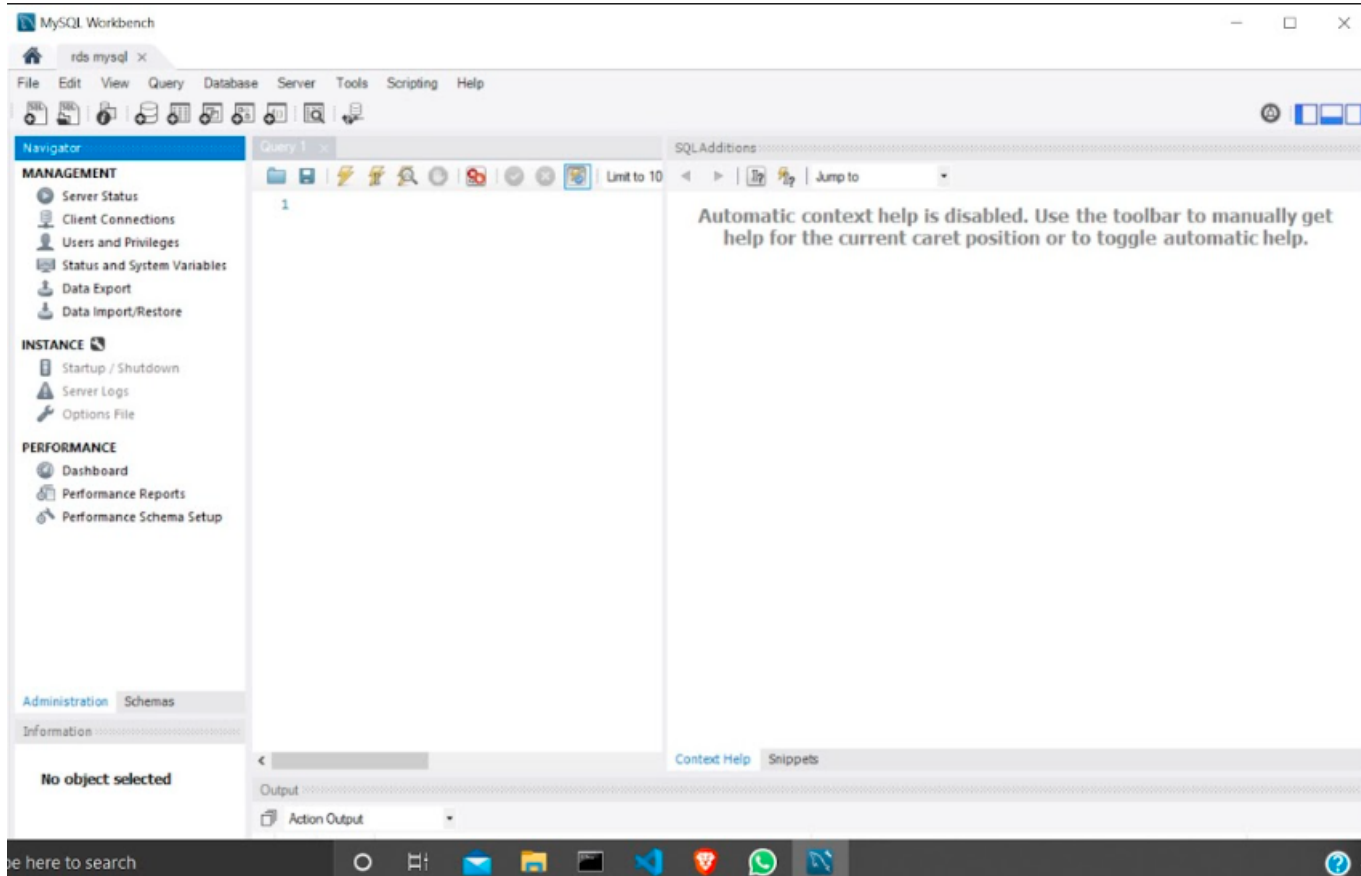
Username: master Name of the user to connect with.

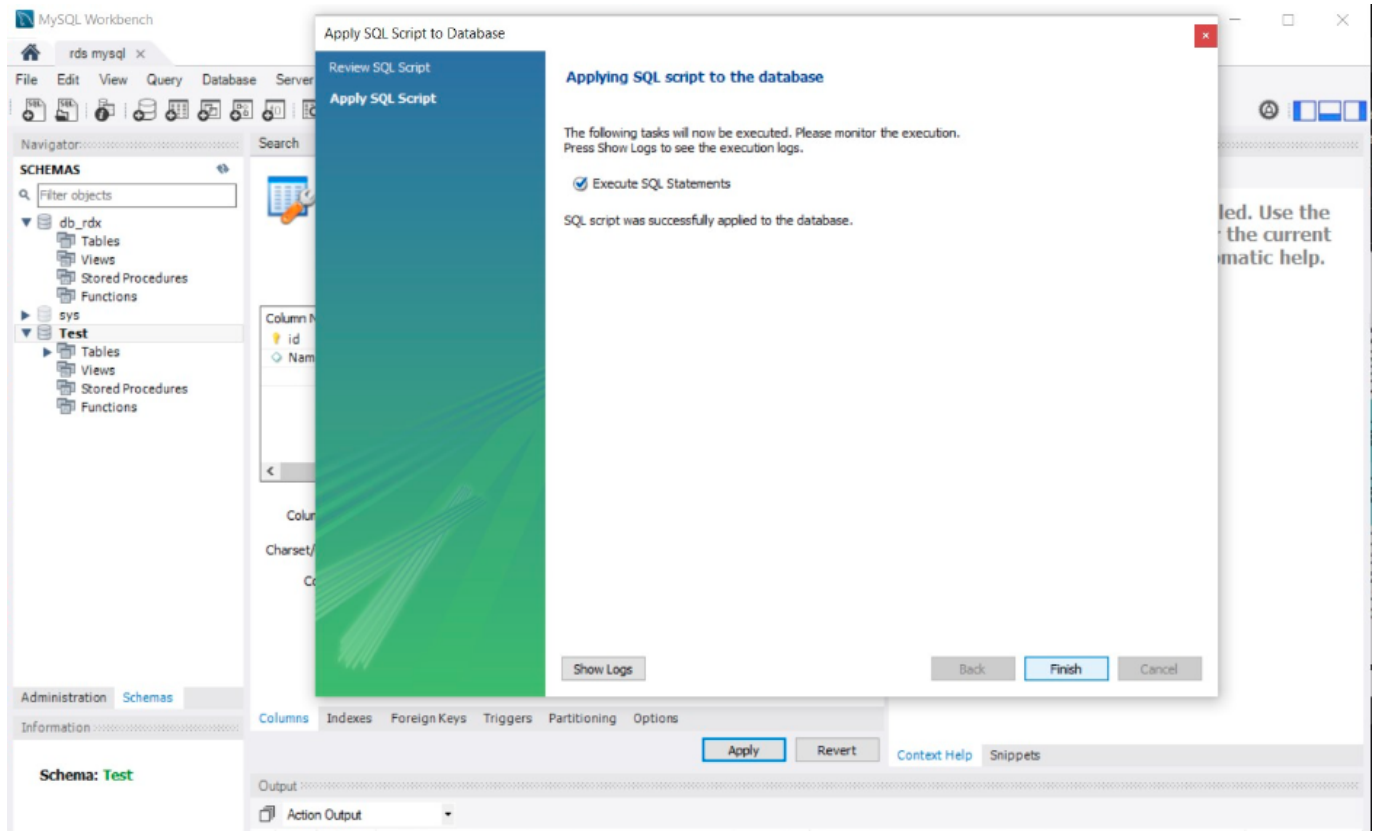
Password: Store in Vault ... Clear The user's password. Will be requested later if it's not set.

Default Schema: The schema to use as default schema. Leave blank to select it later.

OK Cancel

17:14 15-03-2023





Conclusion : Hence we have studied the Database as Service using AWS RDS Service and connected to MySQL database instance of it.