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## Module 7: MariaDB Assignment

AWS Solutions Architect Training

### Problem Statement:

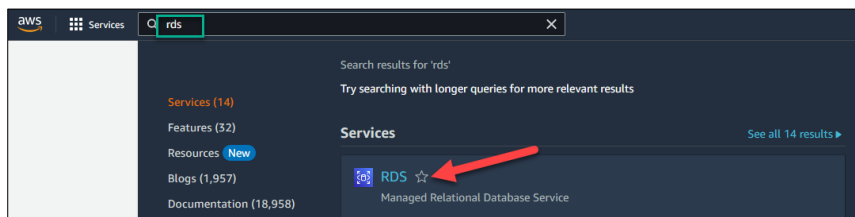
You work for TechArkit Corporation. Their application requires a SQL service that can store data that can be retrieved. Implement a suitable RDS engine for the same.

**While migrating, you are asked to perform the following tasks:**

1. Create a MariaDB Engine-based RDS Database.
2. Connect to the DB using the following ways:
  - a. SQL Client for Windows
  - b. Linux-based EC2 Instance

### Answer

Login to AWS Management Console <https://ap-south-1.console.aws.amazon.com/console/home?region=ap-south-1#> Search for RDS service → Click on RDS.



Create Database

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[RDS](#) > Create database

## 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  


☒ **MariaDB**  


☐ PostgreSQL  


☐ Oracle  


☐ Microsoft SQL Server  


Select the Database-Engine MariaDB as suggested in the question.

Engine Version

MariaDB 10.6.14

**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](#)

**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.

mydatabase

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](#)

Type a login ID for the master user of your DB instance.

admin

1 to 16 alphanumeric characters. The first character must be a letter.

☐ **Manage master credentials in AWS Secrets Manager**  
Manage master user credentials in Secrets Manager. RDS can generate a password for you and manage it throughout its lifecycle.

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Select the Engine Version, Template for use case, DB instance name, Credentials user name (admin) provide the password

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

 **Amazon RDS Optimized Writes** - *new* [Info](#)

☐ Show instance classes that support Amazon RDS Optimized Writes

**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

Select instance type since it is a demo purpose, I have selected the free tier limit

**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

 After you modify the storage for a DB instance, the status of the DB instance will be in storage-optimization. Your instance will remain available as the storage-optimization operation completes.  
[Learn more](#) 

 Storage autoscaling

Select storage type and storage size based on the required.

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### Connectivity [Info](#)



#### 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-0153e269)

3 Subnets, 3 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

[i](#) After a database is created, you can't change its VPC.

#### DB subnet group [Info](#)

Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.

default

#### Public access [Info](#)

##### ☒ Yes

RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.

##### ☐ No

RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

#### VPC security group (firewall) [Info](#)

Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

##### ☒ Choose existing

Choose existing VPC security groups

##### ☐ Create new

Create new VPC security group

#### Existing VPC security groups

Choose one or more options

default X

#### Availability Zone [Info](#)

ap-south-1a

#### RDS Proxy

RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

##### ☐ Create an RDS Proxy [Info](#)

RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#).

#### Certificate authority - optional [Info](#)

Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rds-ca-2019 (default)

If you don't select a certificate authority, RDS chooses one for you.

► Additional configuration

Select the VPC settings (Network)

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### 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.

## Database authentication Password authentication

 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.

Cancel

Create database

 **Successfully created database [mydatabase](#)**

You can use settings from mydatabase to simplify configuration of [suggested database add-ons](#) while we finish creating your DB for you.

DB instance is created successfully. Let's access.

Click on the instance for more details then copy the endpoint details

### Connectivity & security

#### Endpoint & port

Endpoint

mydatabase.cgbnfibbsymt.ap-south-1.rds.amazonaws.com

Port

3306

Connecting to MySQL instance from Visual Studio Code

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Connect to server

Connection error! connect ETIMEDOUT

Name: RDSInstance Connection Scope: Global Premium Only Workspace

Group: Group Connect Timeout: 5000 Read Only: Save Password: Forever

Note: This extension needs to be pay to unlock all features(Limit 3 connections).

Server Type

MySQL MariaDB PostgreSQL SQLite SQL Server Oracle ClickHouse Redshift

SSH Docker Redis ElasticSearch MongoDB S3 FTP Kafka Zookeeper More

\* Host: mydatabase.cgbnfibbsymt.ap-sou \* Port: 3306

\* Username: admin \* Password: \*\*\*\*\*

Database: Connection database Advance Option

Socket Path: e.g. /var/run/mysqld/mysqld.sock Use

SSH Tunnel: Socks Proxy: SSL:

Save Connect Close

Created a simple table to check the connection is working.

DATABASE

AWSMySQL 8.0.30

RDSInstance

innodb

Query

New\_Query\_1695823810807

Tables (1)

Persons

columns

PersonID int(11)

LastName varchar(255)

FirstName varchar(255)

Address varchar(255)

City varchar(255)

index

partitions

Views

Procedures

Functions

New\_Query\_1695823810807.sql

mydatabase.cgbnfibbsymt.ap-south-1.rds.amazonaws.com@... > New\_Query\_1695823810807.sql > ...

```
-- Active: 1695812993049@mydatabase.cgbnfibbsymt.ap-south-1.rds.amazonaws.com@3306@innodb MySQL
1 --
2 CREATE TABLE Persons (
3   PersonID int,
4   LastName varchar(255),
5   FirstName varchar(255),
6   Address varchar(255),
7   City varchar(255)
8 ); 75ms
```

Result

CREATE TABLE Persons ( PersonID int, LastName varchar(255), FirstName varchar(255), Address varchar(255), City varchar(255) );

AffectedRows : 0

That's conclude, able to connect from Windows machine.

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```
[cloudshell-user@ip-10-6-24-54 ~]$ mysql -h mydatabase.cgbnfibbsymt.ap-south-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 320
Server version: 10.6.14-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.00 sec)

MariaDB [(none)]> use innodb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
MariaDB [innodb]> show tables;
+-----+
| Tables_in_innodb |
+-----+
| Persons |
+-----+
1 row in set (0.00 sec)

MariaDB [innodb]> 
```

That Concludes this question.