

U18ISI5006 - Cloud Computing Architecture

Database creation using RDS

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Topic : Database creation using RDS

1. Instance creation :

The screenshot displays the AWS Management Console interface. On the left, the navigation menu includes options like 'EC2 Dashboard', 'Instances', 'Images', and 'Elastic Block Store'. The main content area shows a list of EC2 instances. One instance, named 'database' with ID 'i-049e489c307f8c26e', is highlighted. Below the list, the 'Instance: i-049e489c307f8c26e (database)' details are shown, including its state (Running), type (t2.micro), and various network and security settings.

2. Database creation using RDS :

The screenshot shows the AWS RDS console's 'Choose a database creation method' screen. It offers two options: 'Standard create' (selected) and 'Easy create'. Below this, the 'Engine options' section displays various database engines: Amazon Aurora, MySQL (selected), MariaDB, PostgreSQL, Oracle, and Microsoft SQL Server. At the bottom, the 'Edition' section shows 'MySQL Community' as the selected option. A 'Known issues/limitations' section at the very bottom provides a link to review potential compatibility issues.

▼ 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](#)

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.

db_student

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.

moni

1 to 16 alphanumeric characters. First character must be a letter.

- ☐ **Auto generate a password**
Amazon RDS can generate a password for you, or you can specify your own password.

Master password [Info](#)

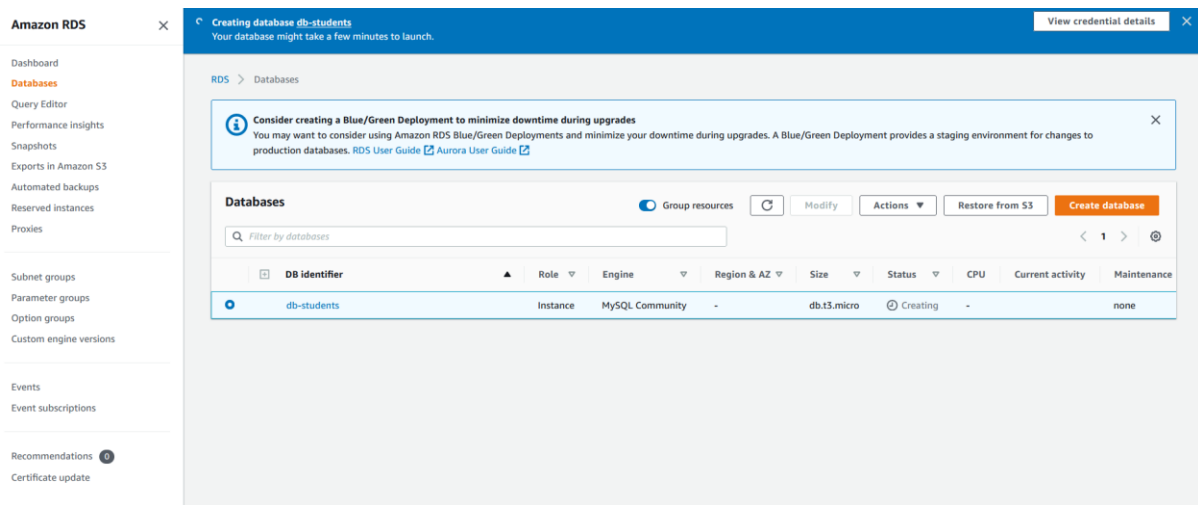
●●●●●●●●

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](#)

●●●●●●●●

3. Database created:



Wait until its created

4. Connect EC2 through putty : Executing 'sudo yum install mariadb'

```
ec2 login as: ec2-user
# Authenticating with public key "database"
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
[ec2-user@ip-172-31-94-80 ~]$ sudo yum install mariadb
Updating Subscription Management repositories.
Unable to read consumer identity
This system is not registered with an entitlement server. You can use subscription-manager to register.

Last metadata expiration check: 0:05:02 ago on Mon 12 Dec 2022 07:04:19 AM UTC.
Dependencies resolved.
=====
Package Arch Version Repository Size
=====
Installing:
mariadb x86_64 3:10.5.16-2.el9_0 rhel-9-appstream-rhui-rpms 1.6 M
Installing dependencies:
mariadb-common x86_64 3:10.5.16-2.el9_0 rhel-9-appstream-rhui-rpms 39 k
mariadb-connector-c x86_64 3.2.6-1.el9_0 rhel-9-appstream-rhui-rpms 203 k
mariadb-connector-c-devel noarch 3.2.6-1.el9_0 rhel-9-appstream-rhui-rpms 11 k
perl-AutoLoader noarch 5.74-479.el9 rhel-9-appstream-rhui-rpms 31 k
perl-B x86_64 1.80-479.el9 rhel-9-appstream-rhui-rpms 194 k
perl-Carp noarch 1.50-460.el9 rhel-9-appstream-rhui-rpms 31 k
perl-Class-Struct noarch 0.66-479.el9 rhel-9-appstream-rhui-rpms 32 k
perl-Data-Dumper x86_64 2.174-462.el9 rhel-9-appstream-rhui-rpms 59 k
perl-Digest noarch 1.19-4.el9 rhel-9-appstream-rhui-rpms 29 k
perl-Digest-MD5 x86_64 2.58-4.el9 rhel-9-appstream-rhui-rpms 39 k
perl-Encode x86_64 4:3.08-462.el9 rhel-9-appstream-rhui-rpms 1.7 M
perl-Errno x86_64 1.30-479.el9 rhel-9-appstream-rhui-rpms 25 k
perl-Exporter noarch 5.74-461.el9 rhel-9-appstream-rhui-rpms 34 k
perl-Fcntl x86_64 1.13-479.el9 rhel-9-appstream-rhui-rpms 32 k
perl-File-Basename noarch 2.85-479.el9 rhel-9-appstream-rhui-rpms 27 k
perl-File-Path noarch 2.18-4.el9 rhel-9-appstream-rhui-rpms 38 k
perl-File-Temp noarch 1:0.231.100-4.el9 rhel-9-appstream-rhui-rpms 63 k
perl-File-Stat noarch 1.09-479.el9 rhel-9-appstream-rhui-rpms 27 k
perl-FileHandle noarch 2.03-479.el9 rhel-9-appstream-rhui-rpms 26 k
perl-Getopt-Long noarch 1:2.52-4.el9 rhel-9-appstream-rhui-rpms 64 k
perl-Getopt-Std noarch 1.12-479.el9 rhel-9-appstream-rhui-rpms 26 k
perl-HTTP-Tiny x86_64 0.076-460.el9 rhel-9-appstream-rhui-rpms 58 k
perl-IO x86_64 1.43-479.el9 rhel-9-appstream-rhui-rpms 103 k
perl-IO-Socket-IP noarch 0.41-5.el9 rhel-9-appstream-rhui-rpms 45 k
perl-IPC-Open3 noarch 1.21-479.el9 rhel-9-appstream-rhui-rpms 34 k
perl-MIME-Base64 x86_64 3.16-4.el9 rhel-9-appstream-rhui-rpms 34 k
perl-Net-SSLeay x86_64 1.92-2.el9 rhel-9-appstream-rhui-rpms 392 k
perl-POSIX x86_64 1.94-479.el9 rhel-9-appstream-rhui-rpms 108 k
perl-PathTools x86_64 3.78-461.el9 rhel-9-appstream-rhui-rpms 92 k
perl-Pod-Escapes noarch 1:1.07-460.el9 rhel-9-appstream-rhui-rpms 22 k
perl-Pod-PerlDoc noarch 3.28.01-461.el9 rhel-9-appstream-rhui-rpms 92 k
perl-Pod-Simple noarch 1:3.42-4.el9 rhel-9-appstream-rhui-rpms 229 k
perl-Pod-Usage noarch 4:2.01-4.el9 rhel-9-appstream-rhui-rpms 43 k
perl-Scalar-List-Utils x86_64 4:1.56-461.el9 rhel-9-appstream-rhui-rpms 77 k
perl-SelectSaver noarch 1.02-479.el9 rhel-9-appstream-rhui-rpms 22 k
perl-Socket x86_64 4:2.031-4.el9 rhel-9-appstream-rhui-rpms 58 k
perl-Socketable x86_64 1:3.21-460.el9 rhel-9-appstream-rhui-rpms 98 k
perl-Symbol noarch 1.08-479.el9 rhel-9-appstream-rhui-rpms 24 k
perl-Sys-Hostname x86_64 1.23-479.el9 rhel-9-appstream-rhui-rpms 29 k
```

Verifying installation:

```
Complete!
[ec2-user@ip-172-31-94-80 ~]$ mysql --version
mysql Ver 15.1 Distrib 10.5.16-MariaDB, for Linux (x86_64) using EditLine wrapper
```

5.Connecting Ec2 and RDS database :

The screenshot shows the AWS Management Console 'Instances' page. A table lists the instance 'database' with ID 'i-049e489c307f8c26e', which is in a 'Running' state. A context menu is open for this instance, displaying various actions. The 'Connect RDS database' option is highlighted in the menu. Other options include 'Attach network interface', 'Detach network interface', 'Change source/destination check', 'Disassociate Elastic IP address', 'Manage IP addresses', and 'Manage ENA Express'. The console also shows tabs for 'Details', 'Security', 'Networking', 'Storage', 'Status checks', 'Monitoring', and 'Tags'.

The screenshot shows the 'Connect RDS database' wizard in the AWS Management Console. The wizard displays the EC2 Instance ID 'i-049e489c307f8c26e' and the Instance VPC ID 'vpc-0442313de9b826a67'. It prompts the user to select a database role (Cluster or Instance) and an RDS database (db-students). The 'Instance' role and 'db-students' database are selected. A warning message states: 'You will incur data transfer fees because your EC2 instance and your RDS database are in different Availability Zones. To avoid incurring these charges, they must be in the same Availability Zone.' The 'Connect' button is highlighted.

Command to connect on instance terminal :

```
mysql -h db-students.c7fsopkj8an3.us-east-1.rds.amazonaws.com -P 3306 -u moni -p
```

[note: **db-students.c7fsopkj8an3.us-east-1.rds.amazonaws.com** - endpoint

moni – master name]

```
[ec2-user@ip-172-31-94-80 ~]$ mysql -h db-students.c7fs0pkj8an3.us-east-1.rds.amazonaws.com -P 3306 -u moni -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 20
Server version: 8.0.28 Source distribution

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

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

MySQL [(none)]> █
```

6. Executing mysql commands :

```
MySQL [(none)]> create table profile;
ERROR 1046 (3D000): No database selected
MySQL [(none)]> use moni;
Database changed
MySQL [moni]> create table profile(name varchar(30) , roll_no varchar(50) PRIMARY KEY, age int);
Query OK, 0 rows affected (0.047 sec)
```

```
Database changed
MySQL [moni]> insert into profile values("Monika","20BIs025",20);
Query OK, 1 row affected (0.008 sec)

MySQL [moni]> select* from profile;
+-----+-----+-----+
| name  | roll_no | age  |
+-----+-----+-----+
| Monika | 20BIs025 | 20  |
+-----+-----+-----+
1 row in set (0.001 sec)

MySQL [moni]> █
```

