38°

Lab - AWS re/Start

[Reto] Crear un servidor RDS

SWIPE

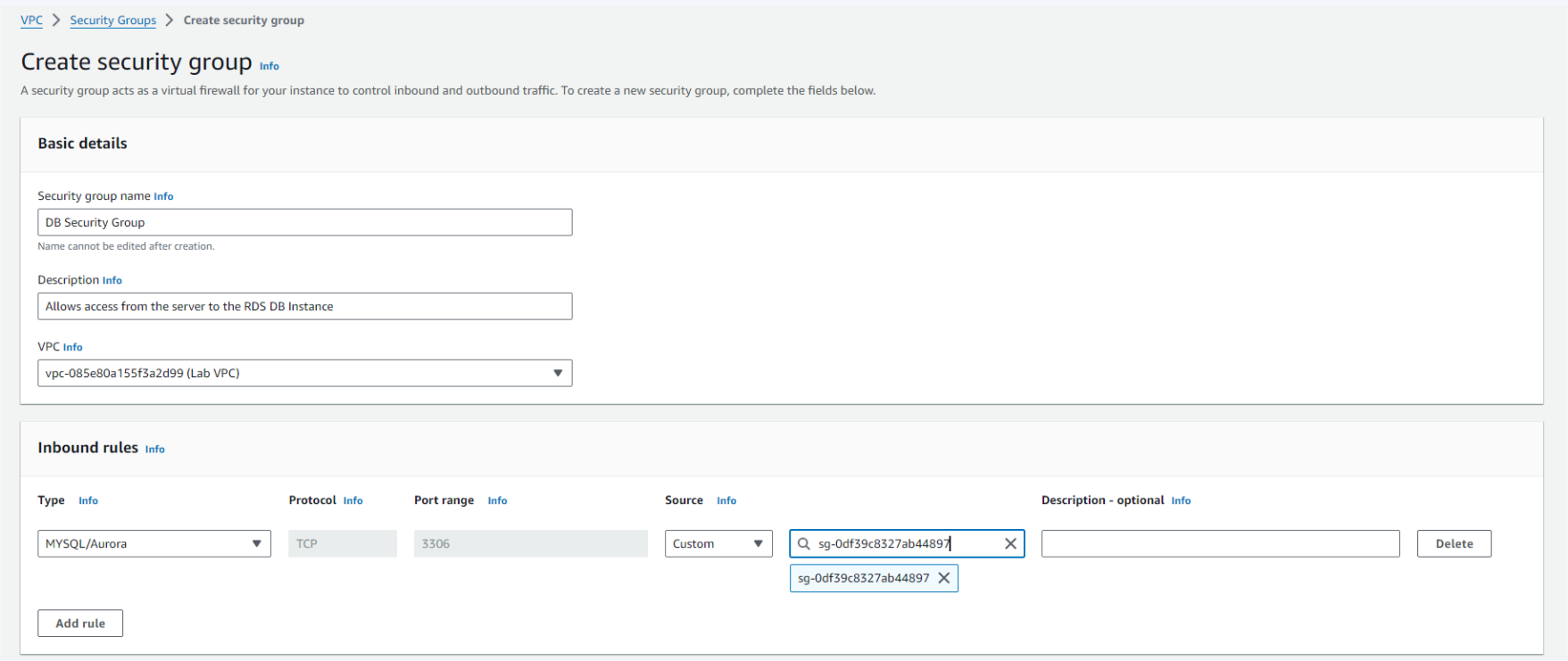
Tarea 01

Realizando Un Reto

A continuación, se muestra los objetivos del laboratorio:

- Crear una instancia de RDS
- Utilice el editor de consultas de Amazon RDS para consultar datos.

Empezamos creando el grupo de seguridad de la instancia de RDS BD, con el fin de que tenga configurada de manera correcta la *regla de entrada* que permita el tráfico desde el servidor. Notar que el grupo de seguridad del que permitimos el ingreso de tráfico es del *LinuxServer*.



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Ahora, procedemos a crear la instancia de RDS BD, en este caso usaremos el motor *MySQL*, que con Amazon Aurora tiene x5 mejor rendimiento:

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

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

Deployment options Info

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

- Multi-AZ DB Cluster
  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.

DB instance class Info

Hide filters

Show instance classes that support Amazon RDS Optimized Writes Info
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Include previous generation classes

- 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

Storage

Storage type Info

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

Allocated storage Info

100 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

Virtual private cloud (VPC) Info

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

Lab VPC (vpc-085e80a155f3a2d99)
4 Subnets, 2 Availability Zones

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

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

default-vpc-085e80a155f3a2d99
4 Subnets, 2 Availability Zones

Public access Info

- Yes
  RDS assigns a public IP address to the cluster. Amazon EC2 instances and other resources outside of the VPC can connect to your cluster. Resources inside the VPC can also connect to the cluster. Choose one or more VPC security groups that specify which resources can connect to the cluster.
- No
  RDS doesn't assign a public IP address to the cluster. Only Amazon EC2 instances and other resources inside the VPC can connect to your cluster. Choose one or more VPC security groups that specify which resources can connect to the cluster.

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

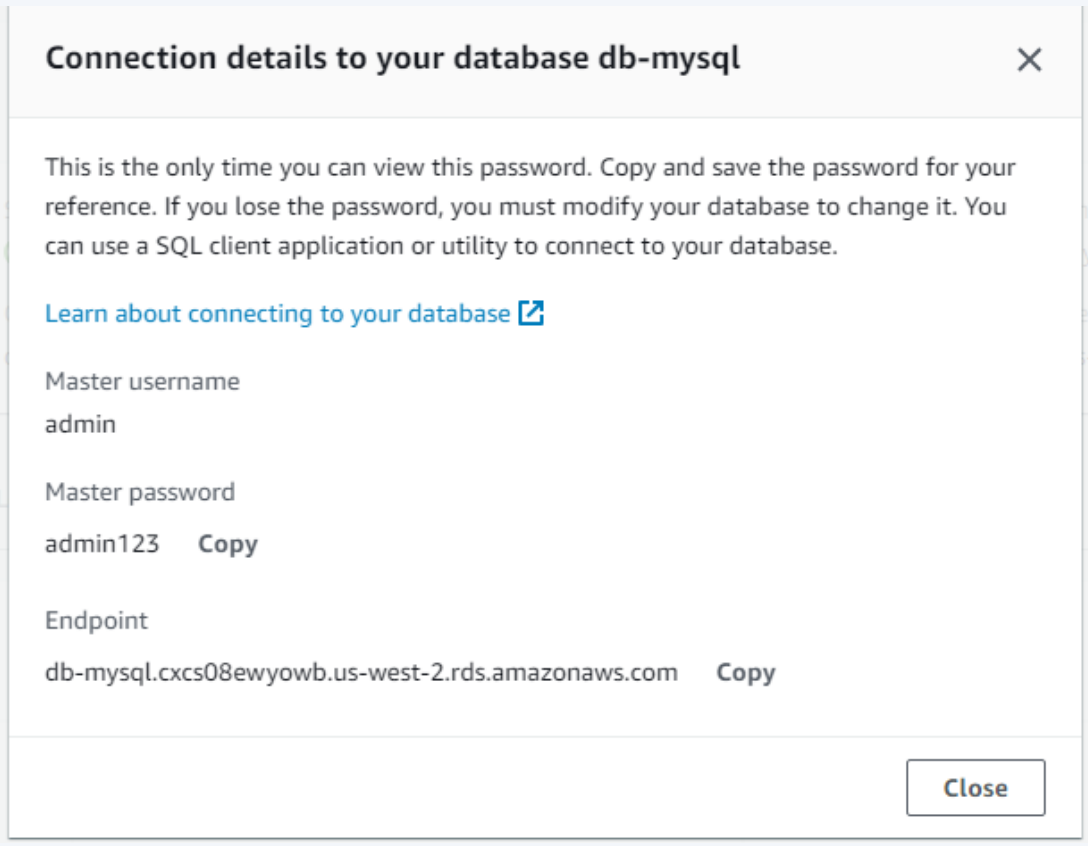
Choose one or more options

DB Security Group

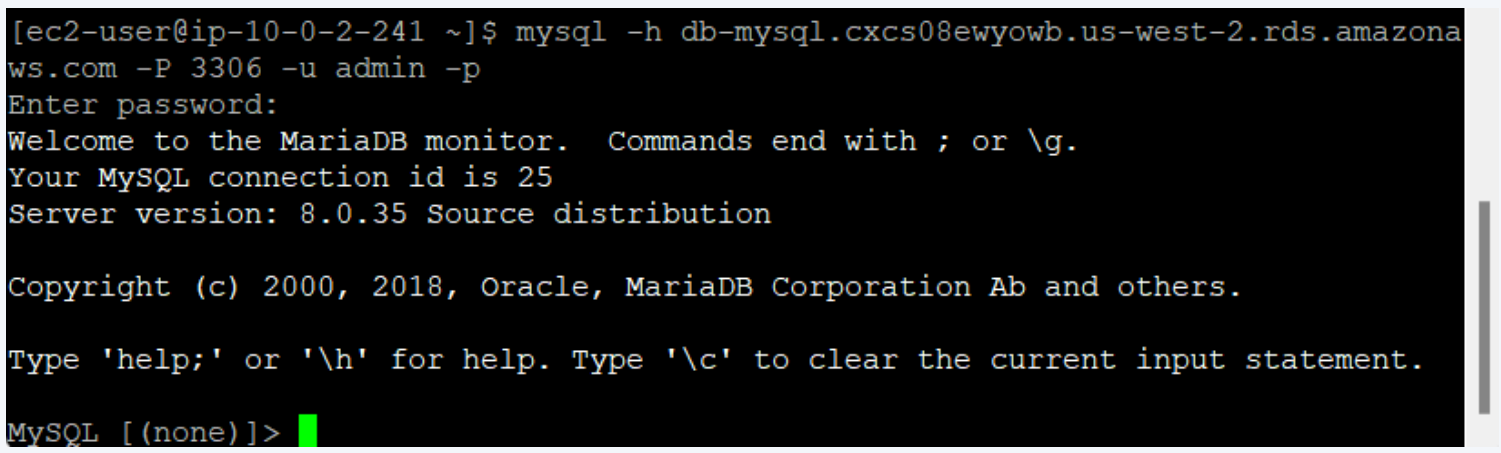
SWIPE

Tarea 01

Después de ello, nos conectamos a nuestra máquina virtual. Y luego desde el servidor a la RDS BD, con ayuda de los siguientes comandos e información de conexión:



sudo dnf install mariadb105
mysql --version
mysql -h db-mysql.cxcs08ewyowb.us-west-2.rds.amazonaws.com -P 3306 -u admin -p



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Ahora, procedemos a agregar tablas y datos en estas. Primero, creamos la tabla RESTART y CLOUD_PRACTIONER en la db *aws*

```
ec2-user@ip-10-0-2-241:~
MySQL [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| aws                |
| information_schema |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.001 sec)

MySQL [(none)]> USE aws;
Database changed
MySQL [aws]> CREATE TABLE `RESTART` (
    -> `StudentID` INT NOT NULL DEFAULT 0,
    -> `StudentName` CHAR(255) NOT NULL DEFAULT '',
    -> `RestartCity` CHAR(255) NOT NULL DEFAULT '',
    -> `GraduationTime` INT NOT NULL DEFAULT 0,
    -> PRIMARY KEY (`StudentID`)
    -> );
Query OK, 0 rows affected (0.021 sec)

MySQL [aws]> CREATE TABLE `CLOUD_PRACTITIONER` (
    -> `StudentID` INT NOT NULL DEFAULT 0,
    -> `CertificationDate` DATETIME NOT NULL DEFAULT '0000-00-00 00:00:00',
    -> PRIMARY KEY (`StudentID`)
    -> );
Query OK, 0 rows affected (0.023 sec)

MySQL [aws]>
```

Insertamos la data:

```
MySQL [aws]> INSERT INTO RESTART (StudentID, StudentName, RestartCity, GraduationTime) VALU
ES
(1, 'Sol Troncoso', 'Santiago de Chile', 20220101),
    -> (1, 'Sol Troncoso', 'Santiago de Chile', 20220101),
    -> (2, 'Sofia Cascante', 'Lima', 20220202),
    -> (3, 'Nicolas Ventosilla', 'Bogota', 20220303),
    -> (4, 'Nelson Araya', 'Calí', 20220404),
    -> (5, 'Michelle Luna', 'Piura', 20220505),
    -> (6, 'Mauricio Oyarzo', 'Guayaquil', 20220606),
    -> (7, 'Matias Cataldo', 'Viña del Mar', 20220707),
    -> (8, 'Marvin Arismendiz', 'Lima', 20220808),
    -> (9, 'Maria del Pilar', 'Bogota', 20220909),
    -> (10, 'Macarena Gajardo', 'Santiago', 20221010);
MySQL [aws]> INSERT INTO CLOUD_PRACTITIONER (StudentID, CertificationDate) VALUES
    -> (1, '2022-01-15 12:30:00'),
    -> (2, '2022-02-20 14:45:00'),
    -> (3, '2022-03-25 10:15:00'),
    -> (4, '2022-04-30 08:00:00'),
    -> (5, '2022-05-05 16:30:00'),
    -> (6, '2022-06-10 11:45:00'),
    -> (7, '2022-07-15 09:00:00'),
    -> (8, '2022-08-20 13:15:00'),
    -> (9, '2022-09-25 15:30:00'),
    -> (10, '2022-10-30 17:45:00');
Query OK, 10 rows affected (0.005 sec)
Records: 10  Duplicates: 0  Warnings: 0
```

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Y haciendo el respectivo *inner join* solicitado para combinar ambas tablas, se tiene lo siguiente:

```
MySQL [aws]> SELECT
    ->     R.StudentID,
    ->     R.StudentName,
    ->     CP.CertificationDate
    -> FROM
    ->     RESTART R
    ->     INNER JOIN CLOUD_PRACTITIONER CP ON R.StudentID = CP.StudentID;
+-----------+-------------------+---------------------+
| StudentID | StudentName       | CertificationDate   |
+-----------+-------------------+---------------------+
|         1 | Sol Troncoso      | 2022-01-15 12:30:00 |
|         2 | Sofia Cascante    | 2022-02-20 14:45:00 |
|         3 | Nicolas Ventosilla | 2022-03-25 10:15:00 |
|         4 | Nelson Araya      | 2022-04-30 08:00:00 |
|         5 | Michelle Luna     | 2022-05-05 16:30:00 |
|         6 | Mauricio Oyarzo   | 2022-06-10 11:45:00 |
|         7 | Matias Cataldo    | 2022-07-15 09:00:00 |
|         8 | Marvin Arismendiz | 2022-08-20 13:15:00 |
|         9 | Maria del Pilar   | 2022-09-25 15:30:00 |
|        10 | Macarena Gajardo  | 2022-10-30 17:45:00 |
+-----------+-------------------+---------------------+
10 rows in set (0.001 sec)

MySQL [aws]>
```