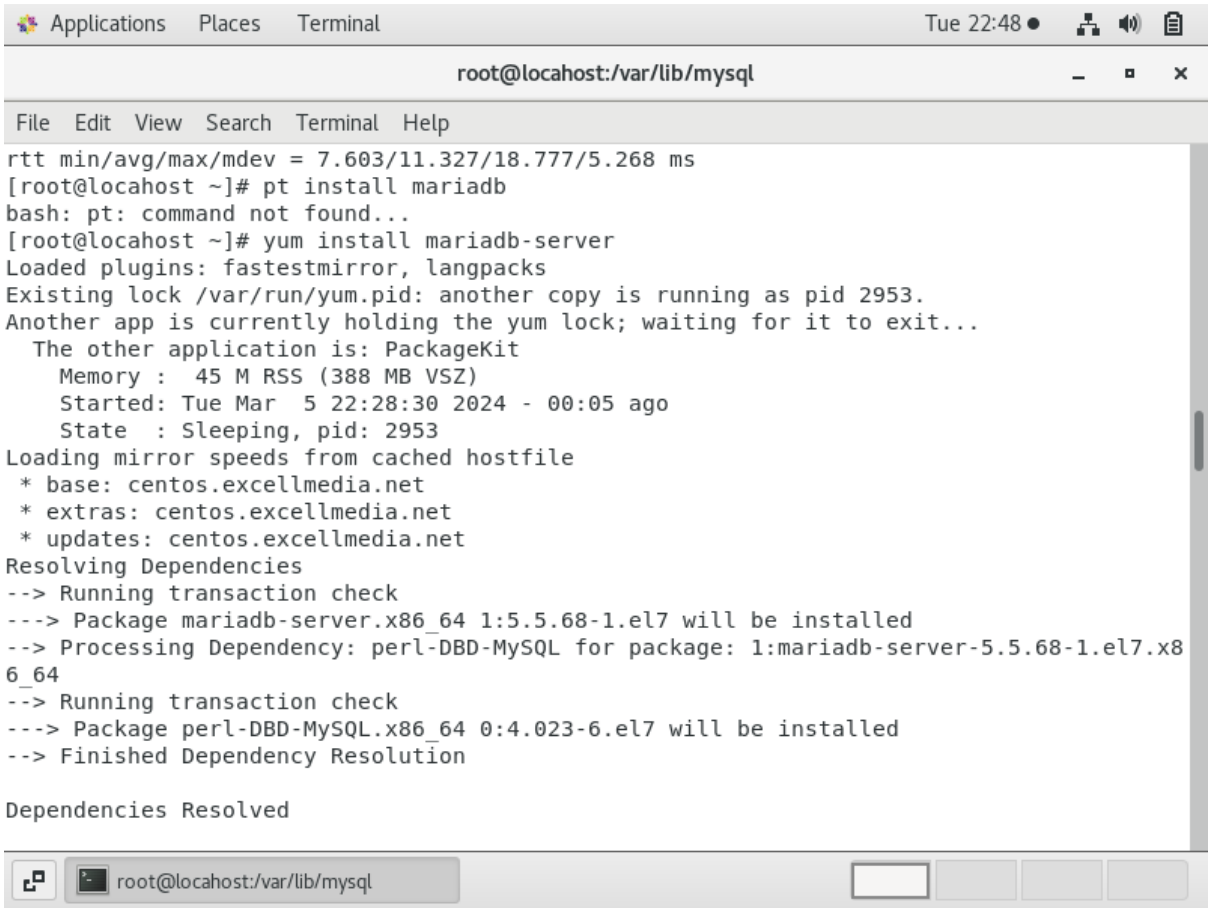
Wednesday, 6 March 2024

# On-premises to cloud migration

First step is to create database in local machine. For this we are using Virtual Box as our on-premises server.

Go to your VirtualBox server and log in to it, Download mariadb on it.

#yum install mariadb




Let's create database on it. The same database we will migrate to our on premises server. Login to MariaDB server as root user using following command.

#mysql -h localhost -u root

After that run following command to create database "test" in Virtual Box using mariadb.

#show databases;

#CREATE DATABASES test;

```
[root@locahost ~]# cd /var/lib/mysql/
[root@locahost mysql]# ls
[root@locahost mysql]# mysql -h localhost -u root
ERROR 2002 (HY000): Can't connect to local MySQL server through socket '/var/lib/mysql
mysql.sock' (2)
[root@locahost mysql]# syetemctl start mariadb
bash: syetemctl: command not found...
[root@locahost mysql]# systemctl start mariadb
[root@locahost mysql]# mysql -h localhost -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 2
Server version: 5.5.68-MariaDB MariaDB Server

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;
```

# use TEST;

#CREATE TABLE cars (car name VARCHAR (20) , company VARCHAR (20) ) ;

```
MariaDB [(none)]> use test
Database changed
MariaDB [test]> CREATE TABLE cars (car_name VARCHAR(20),company VARCHAR(20));
Query OK, 0 rows affected (0.01 sec)
```

#SHOW TABLES;

#INSERT INTO cars (car name, company) VALUES ( "nexon", "tata"), ("Eco Sport",

"Ford"), ( "creata", “hyundai"):

#SELECT * FROM cars

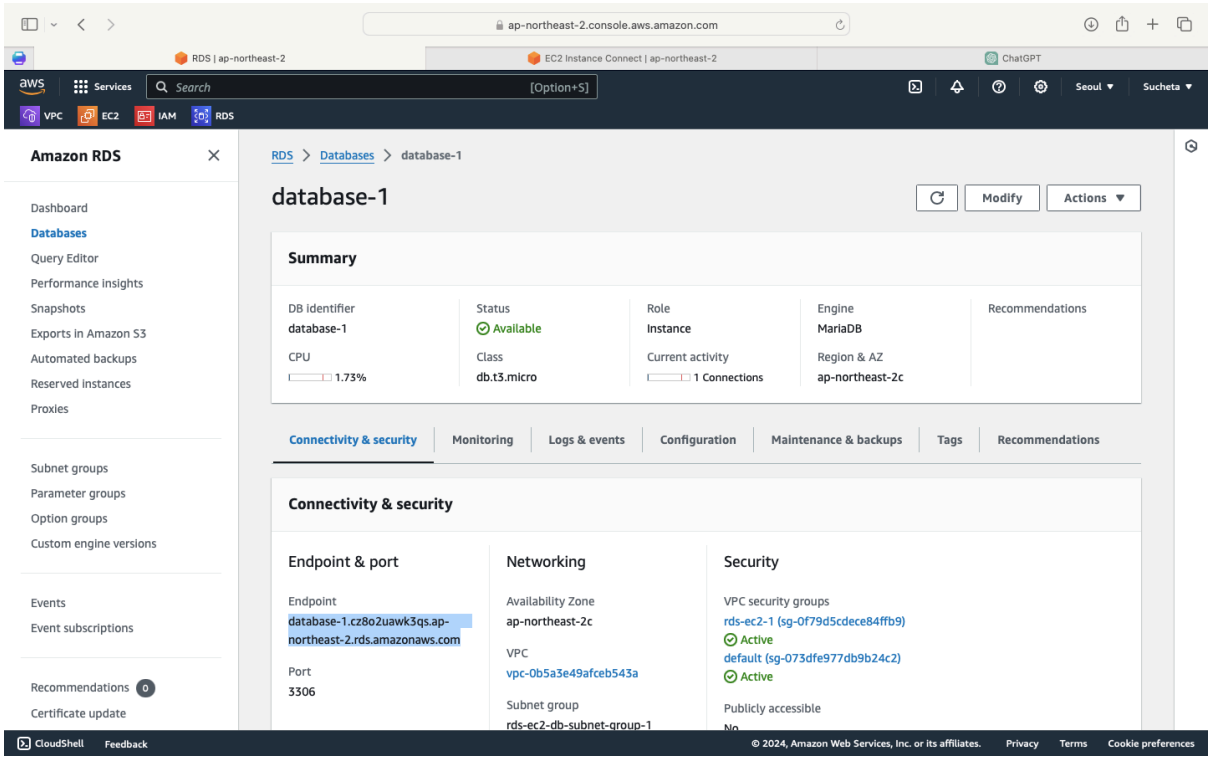
```
MariaDB [test]> SHOW TABLES;
+---------------+
| Tables_in_test |
+---------------+
| cars          |
+---------------+
1 row in set (0.00 sec)

MariaDB [test]> INSERT INTO cars(car_name,company) VALUES("nexon","tata"),("Eco Sport",
"Ford"),("creata","hyundai");
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [test]> SELECT * FROM cars;
+-----------+---------+
| car_name  | company |
+-----------+---------+
| nexon     | tata    |
| Eco Sport | Ford    |
| creata    | hyundai |
+-----------+---------+
3 rows in set (0.00 sec)
```

Create backup file of our on-premises database using below command.

#mysqldump -h localhost -u root test > mydump.sql

```
[root@locahost mysql]# mysqldump -h localhost -u root test > mydump.sql
[root@locahost mysql]# ls
aria_log.00000001  ibdata1      ib_logfile1  mysql       performance_schema
aria_log_control   ib_logfile0  mydump.sql   mysql.sock  test
```

Create RDS database in AWS.



Now that our backup is created we need to migrate this backup file to on premises server and for that we need to use “scp” command that is ‘Secure Copy”.

For secure copy the mydump.sql backup file to migrate we need key pair associated with our ec2-instance. We can not copy anything outside of Virtual Box in our virtual box instance so we are creating key pair from our VirtualBox browser.

First log in to your AWS account, go to EC2 instance, Key pair, create key. This key will be Downloaded on your Virtual box, use this same key to launch your EC2 instance.

Check key.

#cd Downloads

#ls

Copy backup file using following command.

#sp -i abcd.pem /var/lib/mysql/mydump.sql ec2-user@13.125.224.6:/home/ec2-user/

```
[root@locahost ~]# cd Downloads
[root@locahost Downloads]# ls
abcd.pem
[root@locahost Downloads]# scp -i abcd.pem /var/lib/mysql/mydump.sql ec2-user@13.125.22
4.6:/home/ec2-user/
```

Connect to our EC2 instance and download mariadb-server.

#yum install mariadb-server

#systemctl start mariadb-server

#systemctl enable mariadb-server

Connect to RDS instance using below command followed by RDS password.

#mysql -h database-1.cz802uawk3qs.ap-northeast-2.rds.amazonaws.com -u

admin -p

```
[root@ip-172-31-37-139 ~]# mysql -h database-1.cz8o2uawk3qs.ap-northeast-2.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 105
Server version: 10.11.6-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)]> CREATE DATABASE migrate;
Query OK, 1 row affected (0.003 sec)
```

#CREATE DATABASE migrate;

```
MariaDB [(none)]> CREATE DATABASE migrate;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| innodb             |
| migrate            |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
6 rows in set (0.002 sec)

MariaDB [(none)]> EXIT
Bye
```

Exit from it and again create table and populate it using backup file mydump.sql.

#mysql -h <RDS-end-point> -u admin -p migrate < mydump.sql

```
[root@ip-172-31-37-139 ~]# cd /home/ec2-user
[root@ip-172-31-37-139 ec2-user]# mysql -h database-1.cz8o2uawk3qs.ap-northeast-2.rds.amazonaws.com -u admin -p migrate < mydump.sql
Enter password:
[root@ip-172-31-37-139 ec2-user]# mysql -h database-1.cz8o2uawk3qs.ap-northeast-2.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 112
Server version: 10.11.6-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.
```

#SHOW DATABASES;

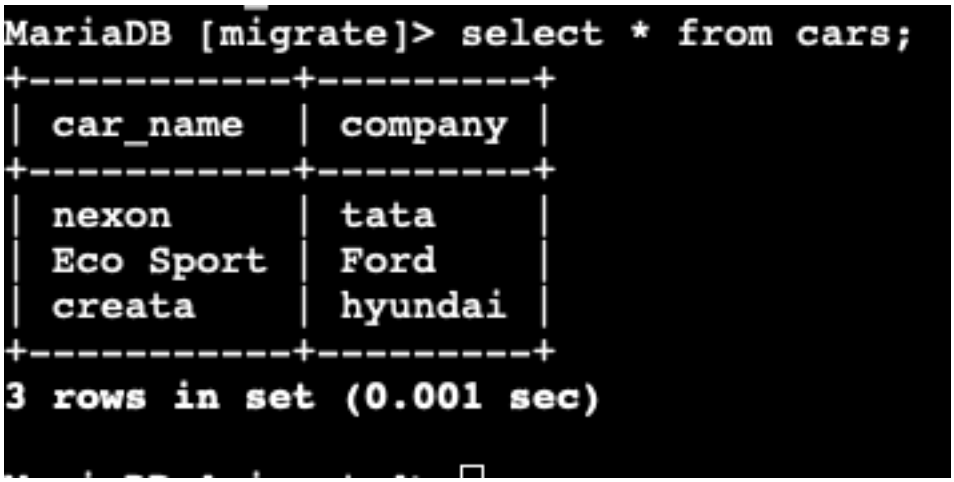
```
MariaDB [(none)]> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| innodb             |
| migrate            |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
6 rows in set (0.001 sec)
```

#USE migrate

#show tables;

```
MariaDB [(none)]> USE migrate;
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 [migrate]> show tables;
+------------------+
| Tables_in_migrate |
+------------------+
| cars             |
+------------------+
1 row in set (0.001 sec)
```

#select * from cars;




If you cam see this, that means data migration is successful.