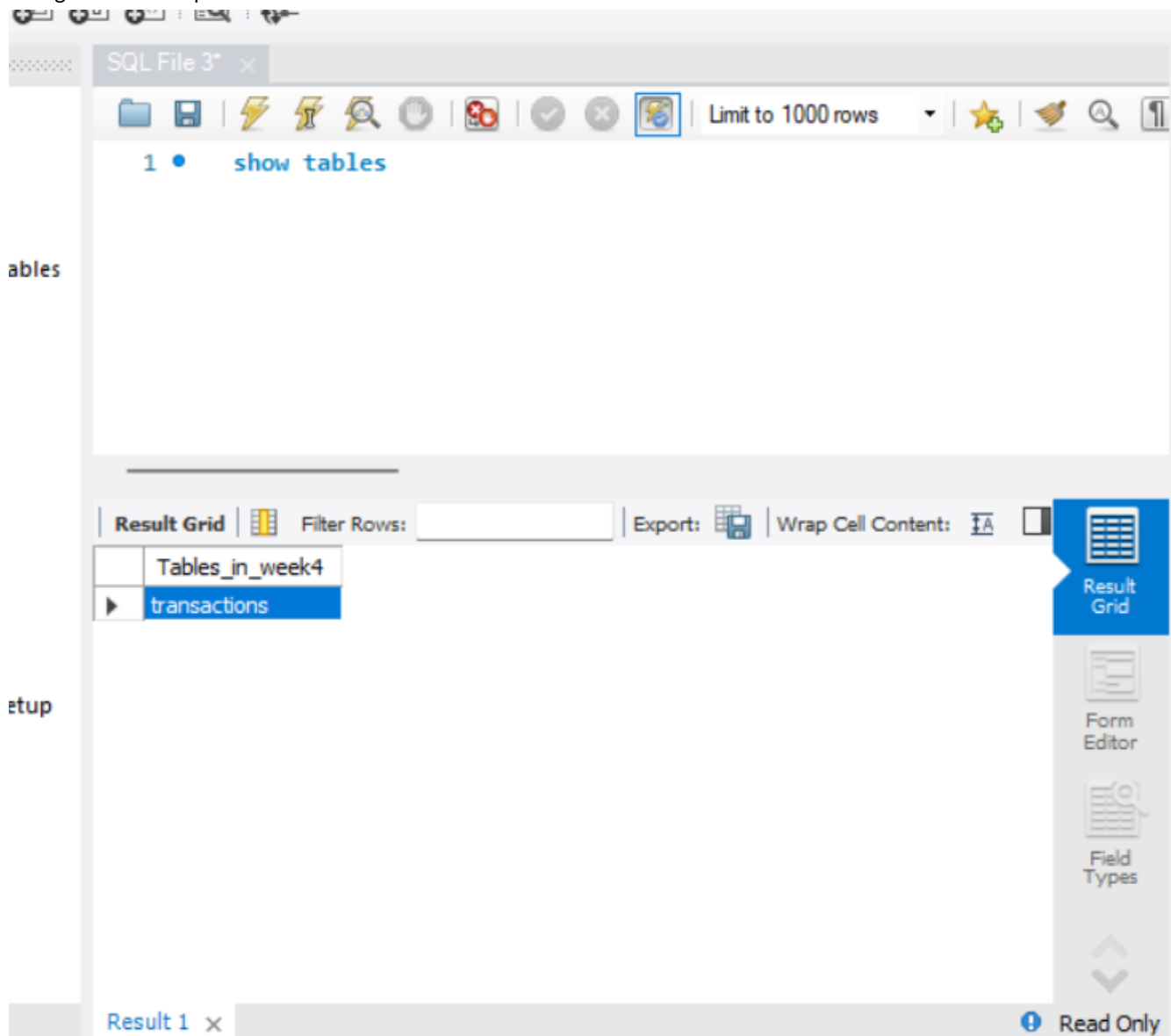


Assignment 1. RDS Resilience testing on AWS

Difficulty: ★★★☆☆.

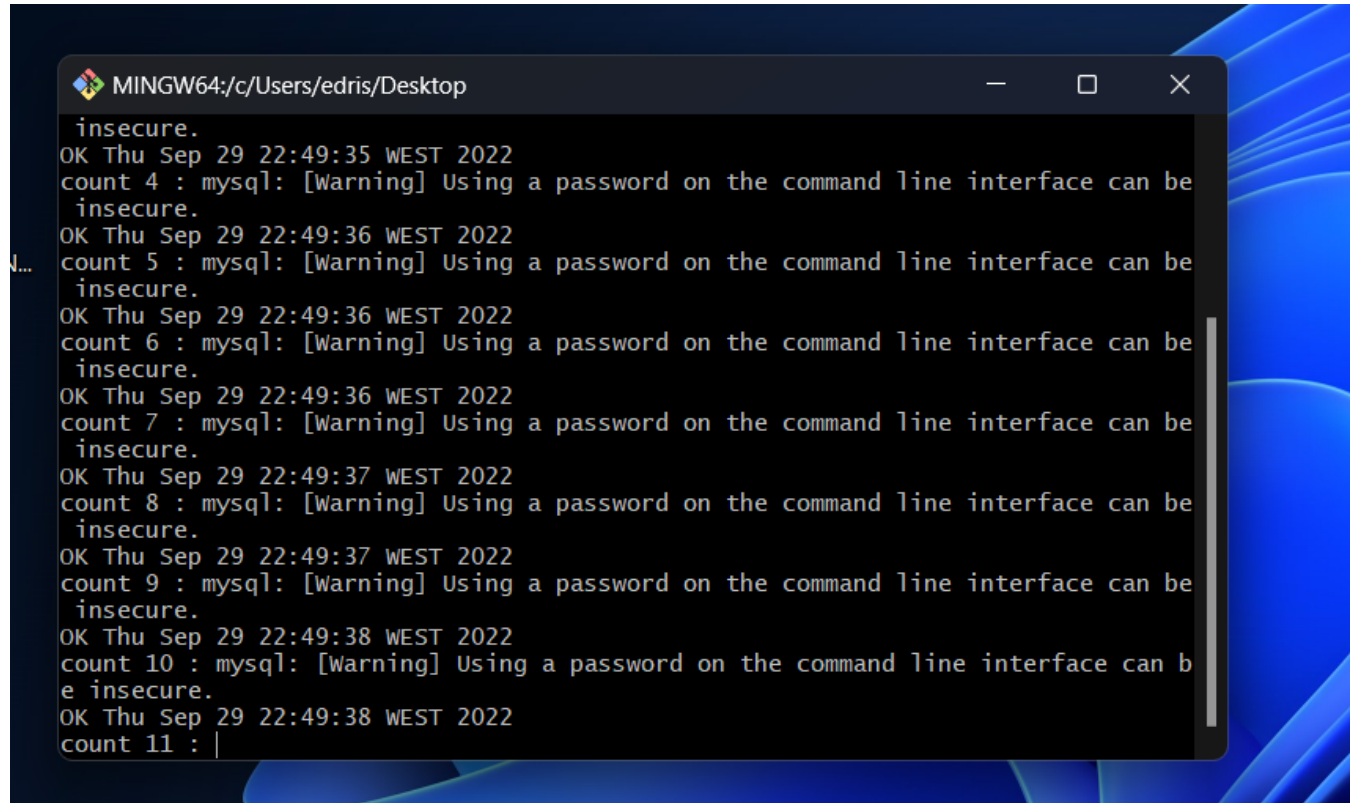
AWS documentation states that failover usually lasts between 60-120 seconds. The purpose of this assignment is to check if these estimations are correct, at least for MySQL databases.

1. Spin up a MySQL RDS instance, **with Multi-AZ enabled**
 - a. Choose *Dev/Test* option and a *burstable* class db.t3.micro
 - b. Set public access to Yes
 - c. In “*Additional configuration*” specify an *Initial database name* to be created directly after instance is created. Name it as you wish, for instance, week8db.
2. Use [SQL script](#) to create a table in the database week8db. If you used different for the database, you’ll need to change it in the script.



3. Amend this [script](#) so that it can connect to your database. It may require mysql command line client installation.
4. Execute the script . It will generate the output similar to the following:

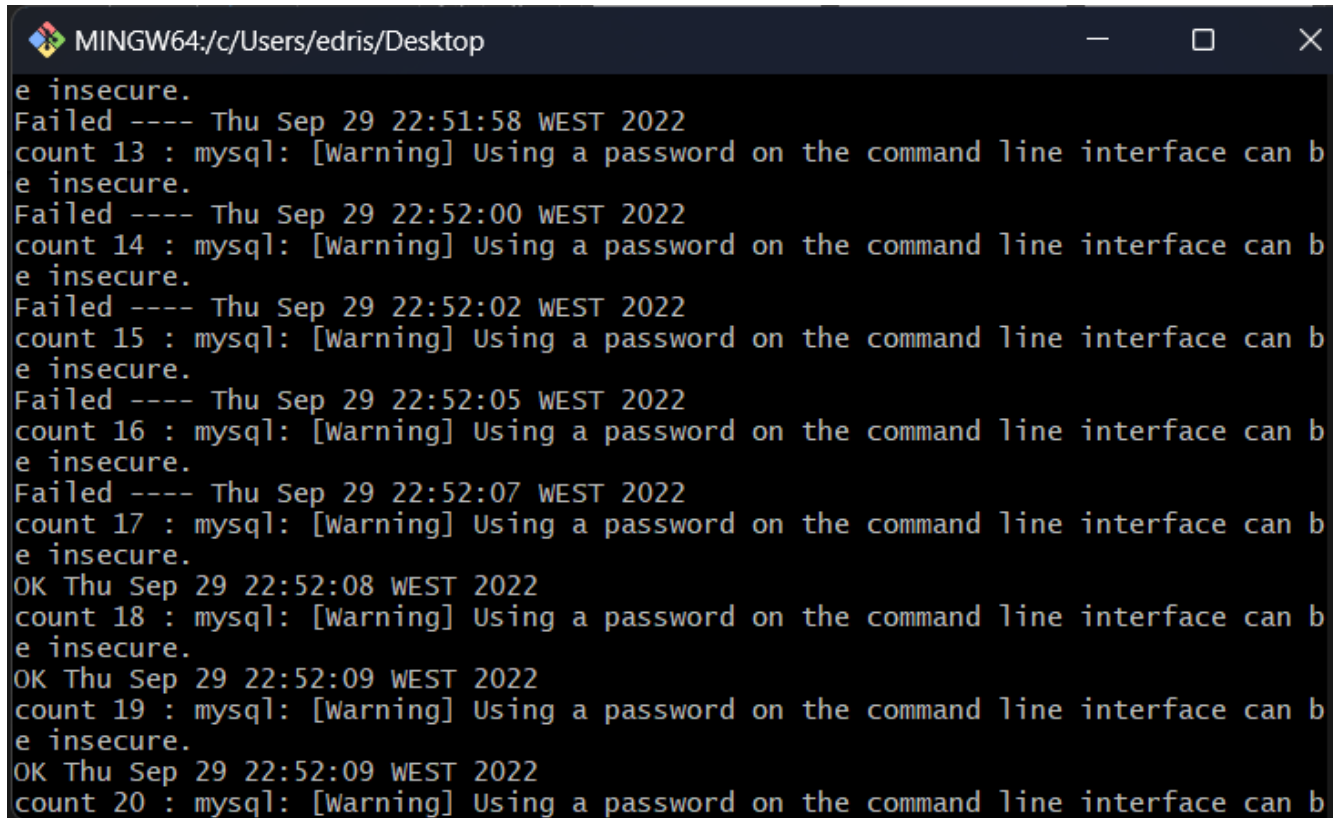
```
count 2028 : OK Thu Oct 21 10:16:46 UTC 2021
count 2029 : OK Thu Oct 21 10:16:46 UTC 2021
count 2030 : OK Thu Oct 21 10:16:47 UTC 2021
count 2031 : Failed ---- Thu Oct 21 10:16:48 UTC 2021
count 2032 : Failed ---- Thu Oct 21 10:16:50 UTC 2021
count 2033 : Failed ---- Thu Oct 21 10:16:52 UTC 2021
count 2034 : Failed ---- Thu Oct 21 10:16:54 UTC 2021
count 2035 : Failed ---- Thu Oct 21 10:16:56 UTC 2021
count 2036 : Failed ---- Thu Oct 21 10:16:58 UTC 2021
```



```
insecure.
OK Thu Sep 29 22:49:35 WEST 2022
count 4 : mysql: [Warning] Using a password on the command line interface can be
insecure.
OK Thu Sep 29 22:49:36 WEST 2022
count 5 : mysql: [Warning] Using a password on the command line interface can be
insecure.
OK Thu Sep 29 22:49:36 WEST 2022
count 6 : mysql: [Warning] Using a password on the command line interface can be
insecure.
OK Thu Sep 29 22:49:36 WEST 2022
count 7 : mysql: [Warning] Using a password on the command line interface can be
insecure.
OK Thu Sep 29 22:49:37 WEST 2022
count 8 : mysql: [Warning] Using a password on the command line interface can be
insecure.
OK Thu Sep 29 22:49:37 WEST 2022
count 9 : mysql: [Warning] Using a password on the command line interface can be
insecure.
OK Thu Sep 29 22:49:38 WEST 2022
count 10 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
OK Thu Sep 29 22:49:38 WEST 2022
count 11 : |
```

5. Reboot your RDS instance, don't forget to **check the failover option!**

6. Observe the output of the script. Terminate it once the connection is restored, make a screenshot and add it to your report. **How much time did the failover take in your case?**



```
MINGW64:/c/Users/edris/Desktop
e insecure.
Failed ---- Thu Sep 29 22:51:58 WEST 2022
count 13 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
Failed ---- Thu Sep 29 22:52:00 WEST 2022
count 14 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
Failed ---- Thu Sep 29 22:52:02 WEST 2022
count 15 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
Failed ---- Thu Sep 29 22:52:05 WEST 2022
count 16 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
Failed ---- Thu Sep 29 22:52:07 WEST 2022
count 17 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
OK Thu Sep 29 22:52:08 WEST 2022
count 18 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
OK Thu Sep 29 22:52:09 WEST 2022
count 19 : mysql: [Warning] Using a password on the command line interface can b
e insecure.
OK Thu Sep 29 22:52:09 WEST 2022
count 20 : mysql: [Warning] Using a password on the command line interface can b
```

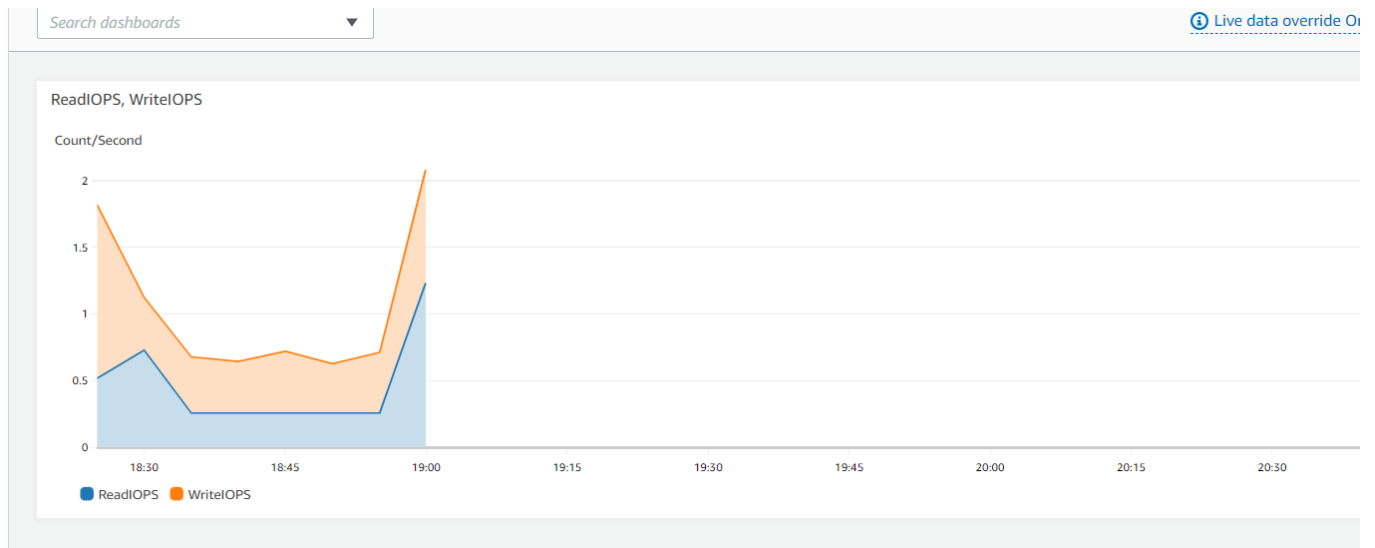
It only took a few seconds, 45 seconds.

7. In CloudTrail find the related events and try explaining them. Attach the screenshot to the report. **How do we know this failover was caused by the user initiated reboot?**

<input type="checkbox"/>	RebootDBInstance	September 29, 2022, 22:50:56 (...)	edris	rds.amazonaws.com	AWS::RDS::DBInstance,...	mss
<input type="checkbox"/>	AssumeRole	September 29, 2022, 22:39:18 (...)	-	sts.amazonaws.com	AWS::IAM::AccessKey, ...	ASI.

It tells use the IAM username of the user who caused the reboot. In this case: Edris. Else it would've been empty

8. Create a dashboard in CloudWatch to monitor read and write IOPS for your database. Amend the following [script](#) to match your configuration and execute it. How the workload is reflected in your dashboard? Do you have enough IOPS to sustain this load? Provide a couple of screenshots with the explanation what was going on at the database level.



My IOPS skyrocketed from nothing. I don't have enough IOPS to sustain this load. If we sum up both the read and write IOPS we are constantly above 2 meaning we are under provisioned.

The database is writing faster than it can read.