INTELLIPAAT

AWS CAPSTONE PROJECT-1

- Iyappan

Link to source code: https://github.com/Iyappan97/Php_RDS_Autoscale_project.git

Problem Statement:

Company ABC wants to move their product to AWS. They have the following things set up right now:

1. MySQL DB
2. Website (PHP)

The company wants high availability on this product, therefore wants Auto Scaling to be enabled on this website.

Steps To Solve:

1. Launch an EC2 Instance
2. Enable Auto Scaling on these instances (minimum 2)
3. Create an RDS Instance
4. Create Database & Table in RDS instance:

a. Database name: intel

b. Table name: data

c. Database password: intel123

5. Change hostname in website
6. Allow traffic from EC2 to RDS instance
7. Allow all-traffic to EC2 instance

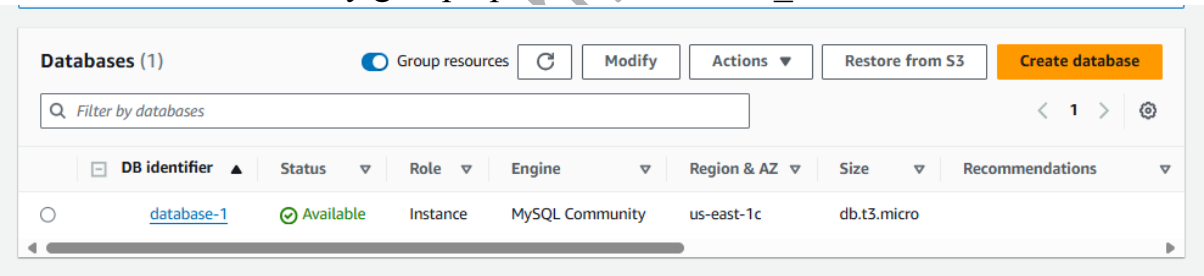
SOLUTION:

PROJECT REQUIREMENT:

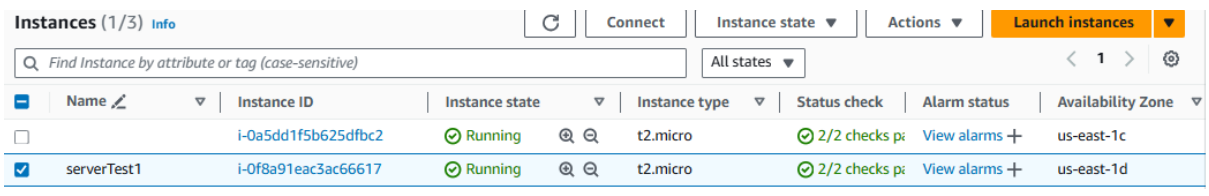
1. Running Ec2 instance with apache2 installed in it.
2. Php application with connection to Database
3. RDS instance to store database
4. Auto-scaling group
5. Load balancer with target group to pointed to Auto-scaling group

STEPS:

1. Create a security group:
    a. Name: SG-1
    b. Port: http ; Allow: Anywhere
    c. Port:SSL : Allow:Anywhere (Restrict this access to allow only from your machine for better security)
2. Create a Target group (TG1) – we will use it when we create Auto-scalling group.
3. Creating RDS instance
    a. Name : database-1
    b. Security group : port : 3306 ; Allow_From: SG-1



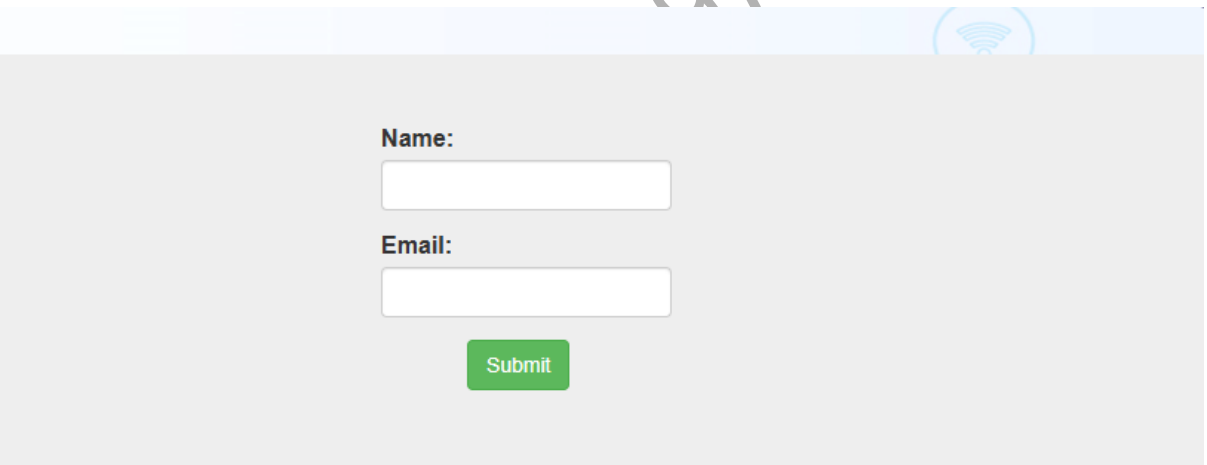
    c. Create a user and save the pswd
4. Create a Ec2 instance
    a. Instance_type : (basic is OK) t2.micro(free tier)
    b. Image : ubuntu
    c. Secutrity group: Port: 22 (SSL); Allow: anywhere(restrict this)
       Port: html; Allow : anywhere



5. Login into Instance
    a. $ sudo apt-get update
    b. $ sudo apt install apache2
    c. $ cd /var/www/html/
    d. Remove index.html
    e. Place ur php file with its dependencies

```
ubuntu@ip-172-31-47-170:~$ ls
ubuntu@ip-172-31-47-170:~$ cd /var/www/html/
ubuntu@ip-172-31-47-170:/var/www/html$ ls
images  index.php
```

    f. Edit the php file to configure it to connect with RDS instance we created.
    g. Install mysql which supports PHP.
    h. Login to RDS server create a database & Table as configured in php file.
    i. Check connection with database server and update and check.
    j. Open ur php app in web browser



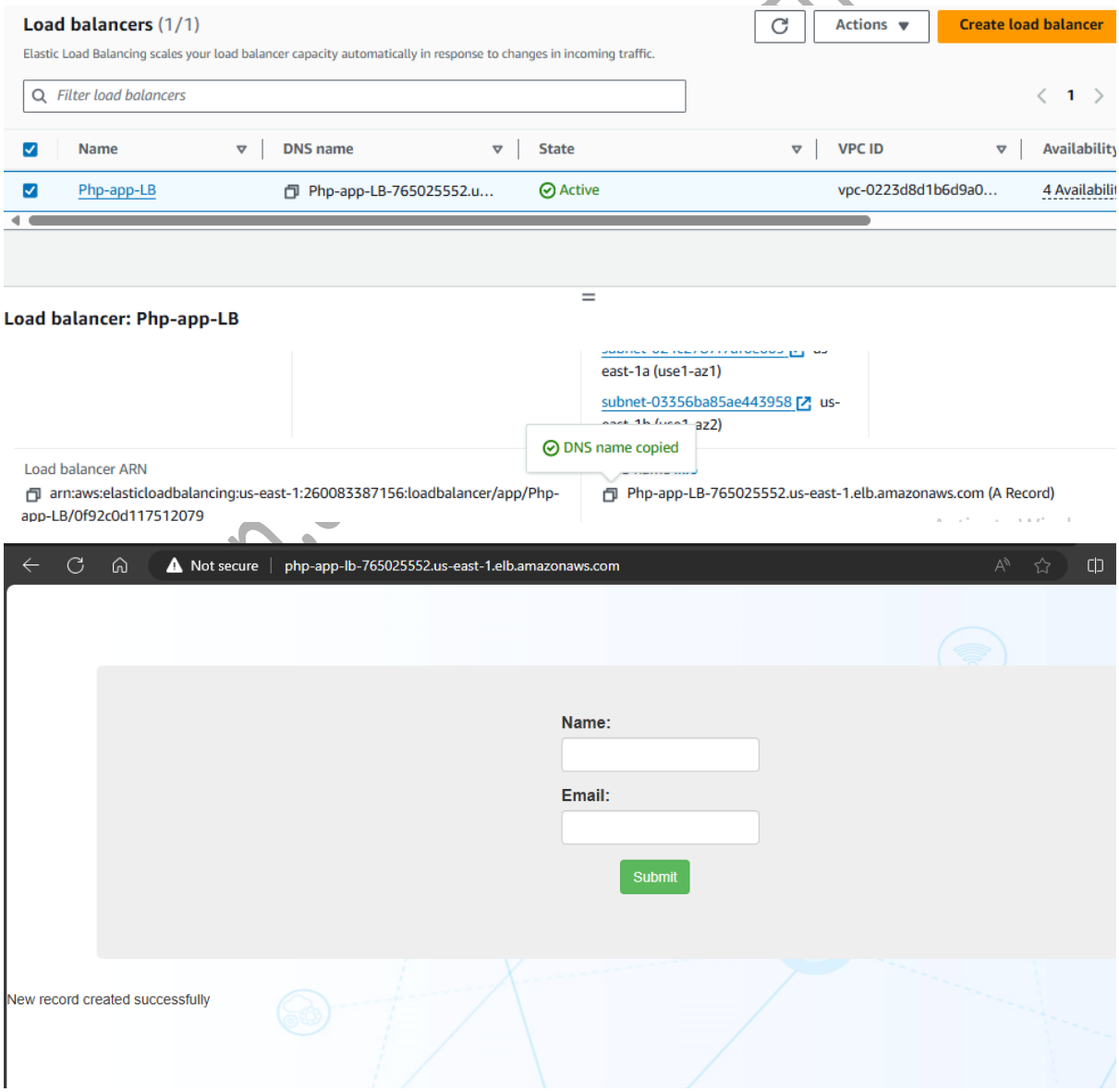
    k. Add entery into the given field.
    l. Check the entry from mysql table.

```
mysql> select * from data;
+-------------+----------------------+
| firstname   | email                |
+-------------+----------------------+
| iyappan     | 000@gmail.com        |
| ritheesh    | worstboy@world.com   |
| rithesh     | kuttukunjan@gmail.com |
| ragu        | raguraja@gmial.com   |
| amma        | asaithambivalli@gmail |
| jasbkjbaskjd | jafjkabskfjbsdkjbfkjd |
| jahdfkhad   | svadjhvfdavhjdf      |
| 1111111111  | 11111111111111111111 |
+-------------+----------------------+
8 rows in set (0.00 sec)
```

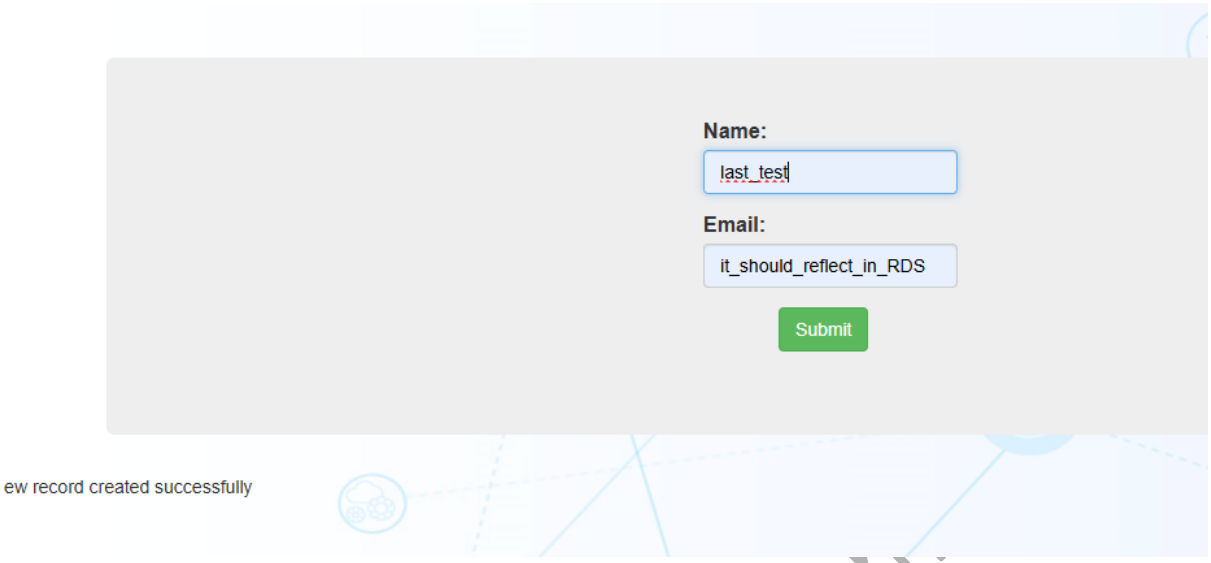
6. Create a Image out of the running instance that we created.
7. Create a template from the image use the same SG-1.
8. Create a Loadbalancer & attach it to TG1 target group.
9. Create a auto-scaling group with the template that we created mention the followings
    a. Desired instance
    b. Maximum instance
    c. Minimum instance
10. Attach the load balancer to auto-scaling group.

TEST:

1. Ping the laodbalancer endpoint it should reflect the web application.



2. Update entry in the field

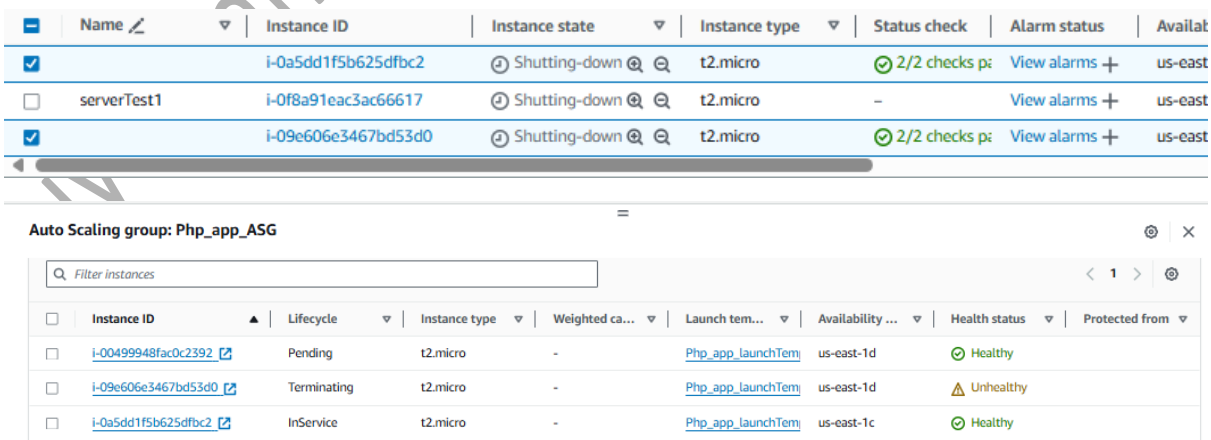


3. check the entry in RDS database.

firstname	email
iyappan	000@gmail.com
ritheesh	worstboy@world.com
rithesh	kuttukunjan@gmail.com
ragu	raguraja@gmial.com
amma	asaithambivalli@gmail
jasbkjbaskjd	jafjkabskfjbsdkjbfkjd
jahdfkhad	svadjhvfdavhjdf
1111111111	11111111111111111111
last_test	it_should_reflect_in_

9 rows in set (0.00 sec)

4. delete a instance to check auto scaling is scaling up to desired state.



Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availab
	i-0a5dd1f5b625dfbc2	Shutting-down	t2.micro	2/2 checks pa	View alarms	us-east
serverTest1	i-0f8a91eac3ac66617	Shutting-down	t2.micro	–	View alarms	us-east
	i-09e606e3467bd53d0	Shutting-down	t2.micro	2/2 checks pa	View alarms	us-east

Auto Scaling group: Php_app_ASG

Filter instances

Instance ID	Lifecycle	Instance type	Weighted ca...	Launch tem...	Availability ...	Health status	Protected from
i-00499948fac0c2392	Pending	t2.micro	-	Php_app_launchTem	us-east-1d	Healthy	
i-09e606e3467bd53d0	Terminating	t2.micro	-	Php_app_launchTem	us-east-1d	Unhealthy	
i-0a5dd1f5b625dfbc2	InService	t2.micro	-	Php_app_launchTem	us-east-1c	Healthy	

Hence , we created and tested the project completed