INTELLIPAAT AWS CAPSTONE PROJECT 2

- Iyappan A

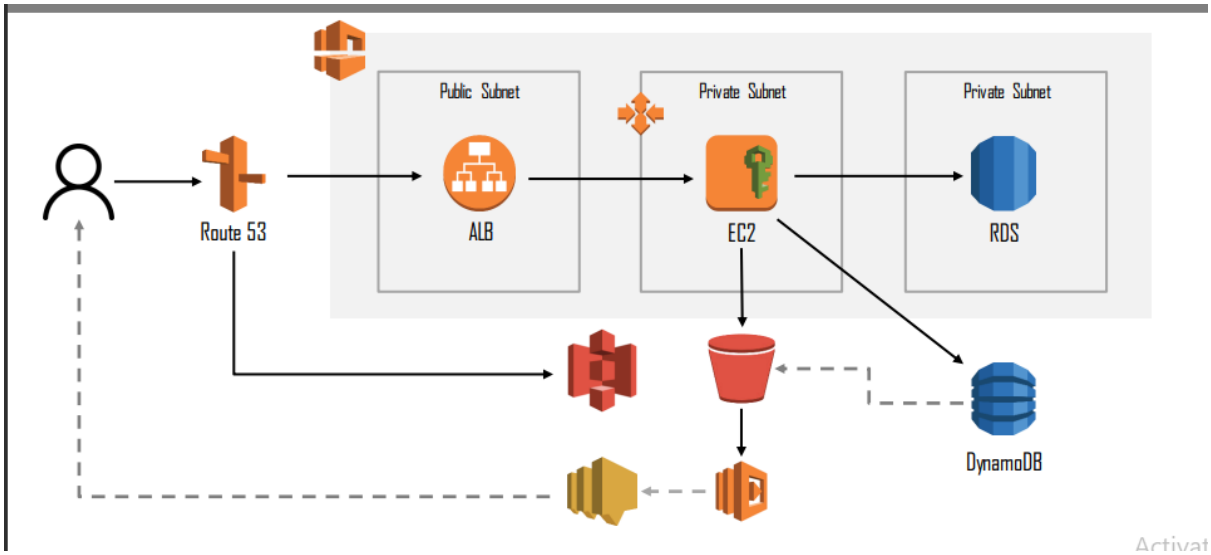
PROBLEM STATEMENT:

1. Use a python web application to pull employee form data
2. Data should include basic ID information with image
3. Store it in secure database using AWS services
4. Retrieve the data and check

RESOURCE REQUIREMENTS:

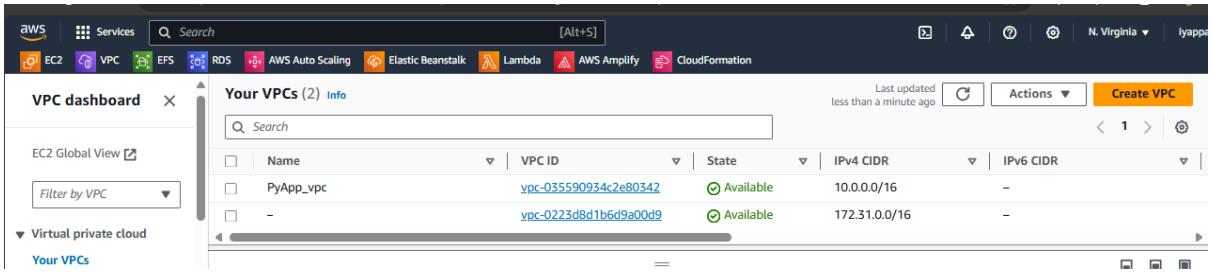
1. VPC network and other supplementary components
    a. Subnets
    b. Internet gateway
    c. Nategateway
    d. Routetables
2. S3 bucket – to store image files from form
3. DynamoDB Table – to maintain table of employee ID and image URL
4. RDS – to maintain SQL database
5. Ec2 machine – to host python web application
6. Loadbalancer – to route the traffic

TECHNICAL ARCHITECTURE:

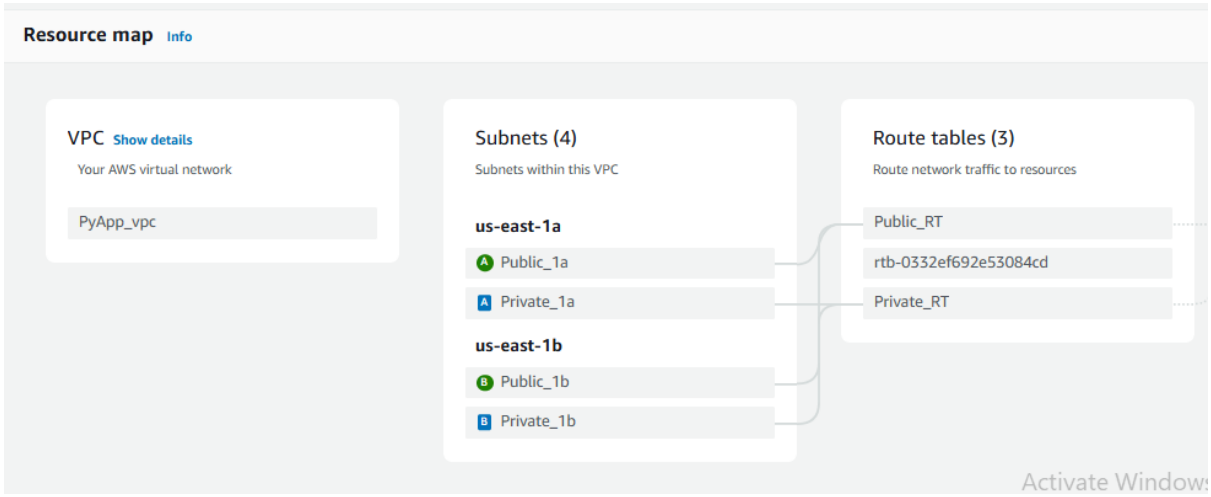


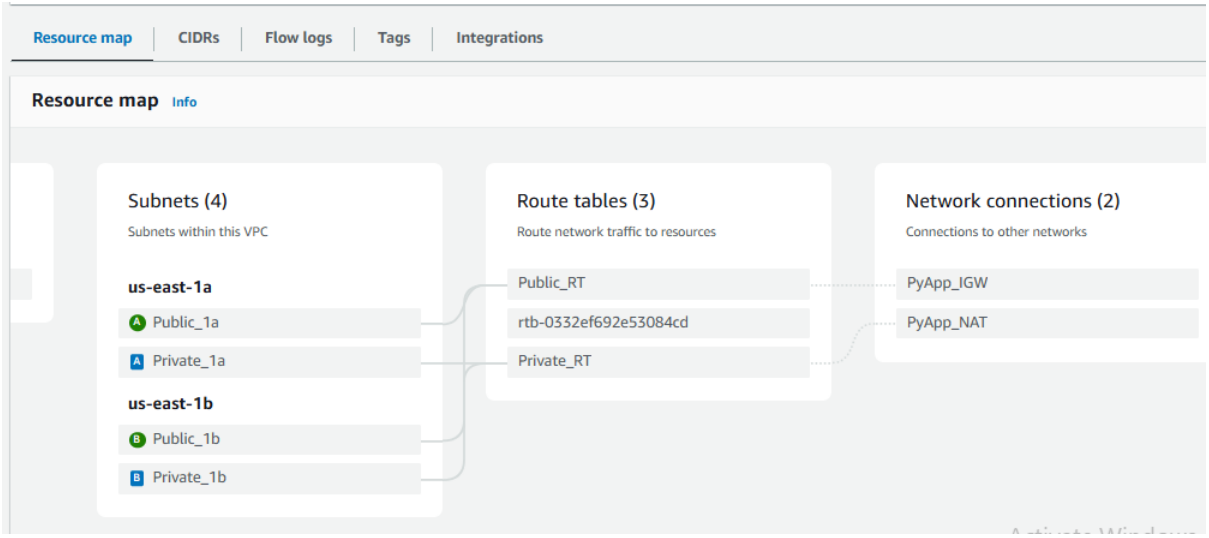
SOLUTION:

1. Create a VPC with 4 subnets (2 public and 2 private)

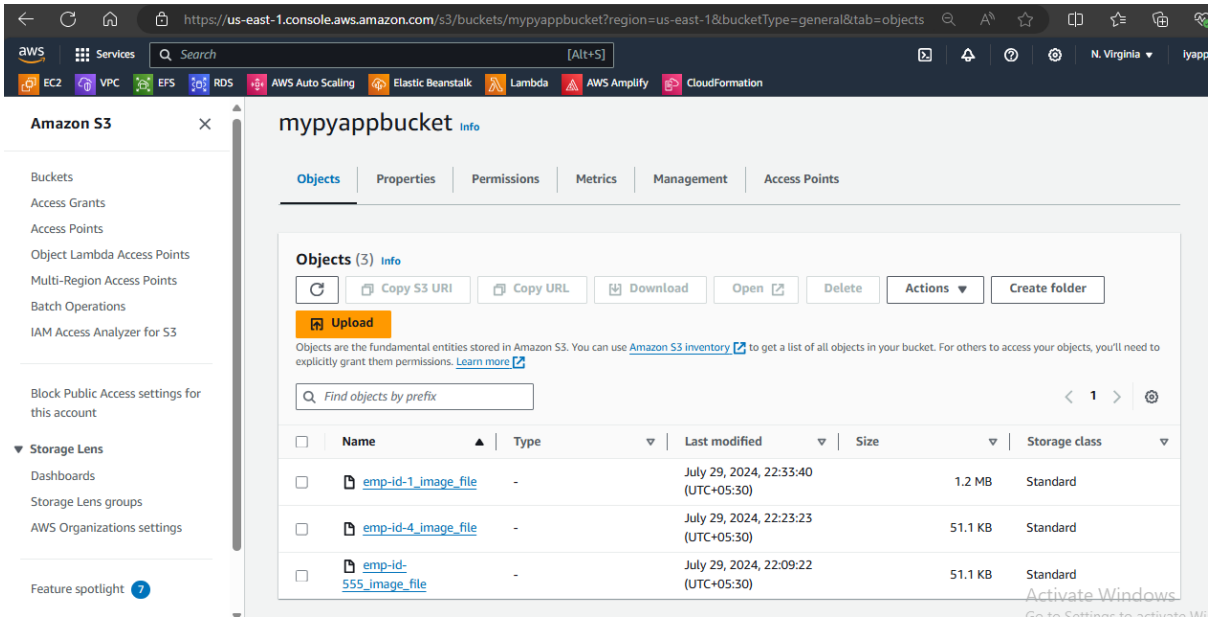


2. Create route table separate for both public and private.

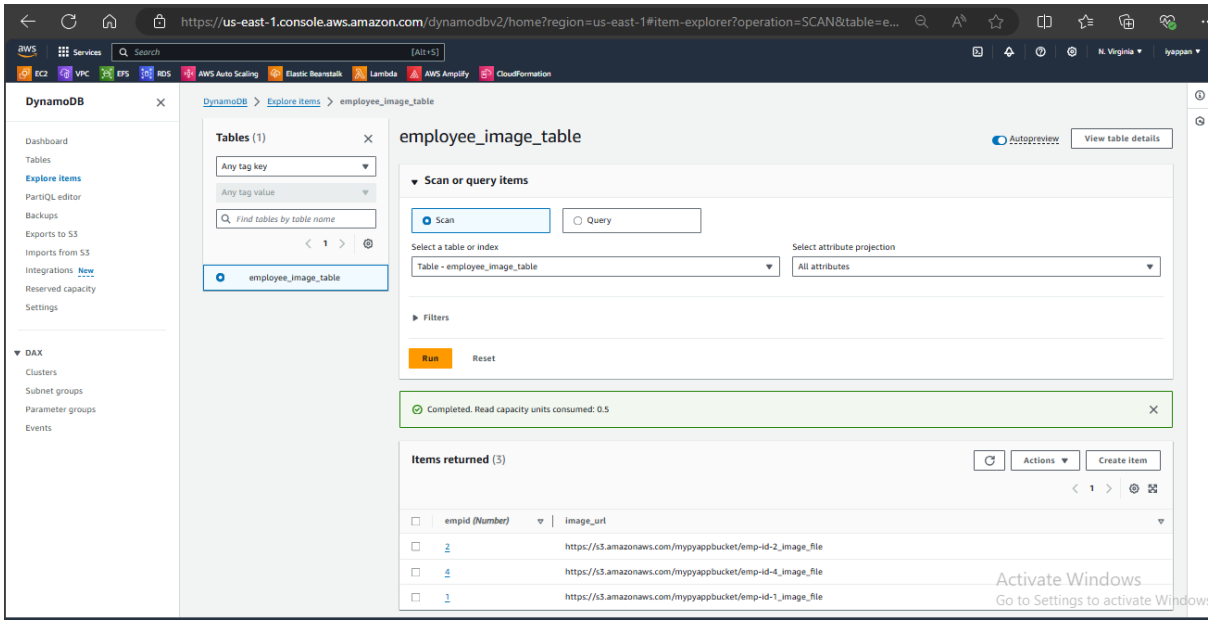




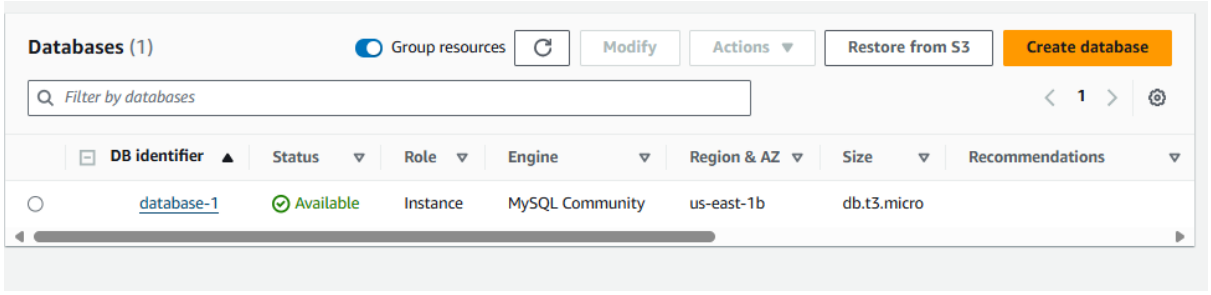
3. Attach internet gateway to public subnets
4. Create NAT in public subnet and attach NAT gateway to private subnets
5. Create a s3 bucket



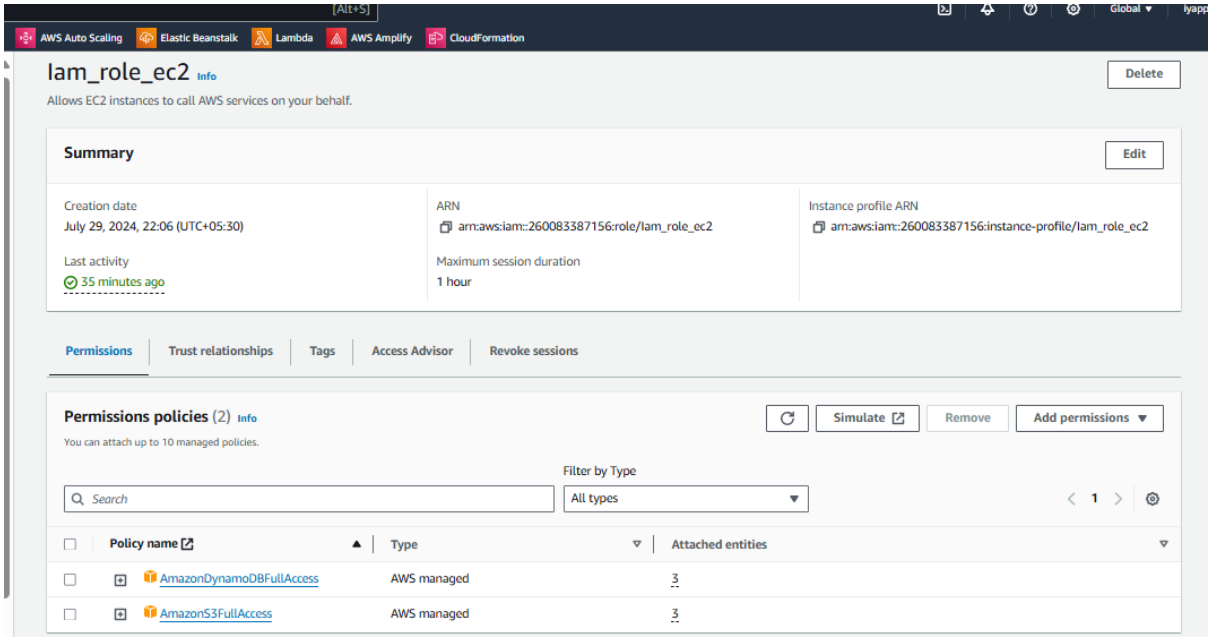
6. Create DyanmoDB table with Employee DB and schema to store Image url and corresponding emp ID.



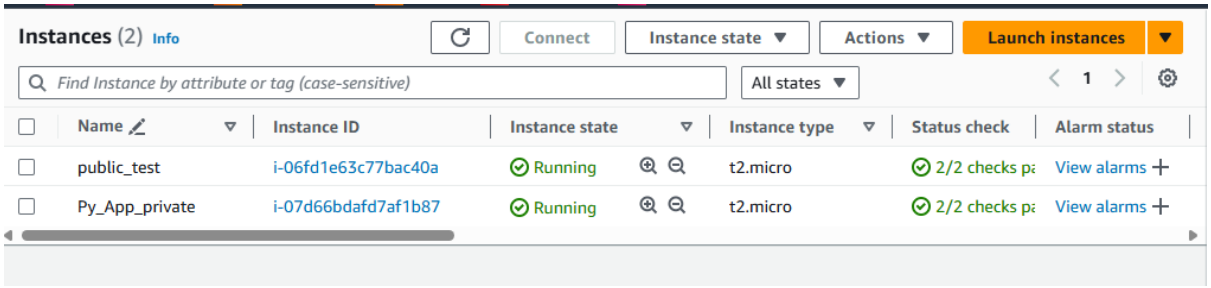
7. Create a RDS database with Employee DB and schema to store data from the form.



8. Create an IAM role with S3 access and DynamoDB access policy

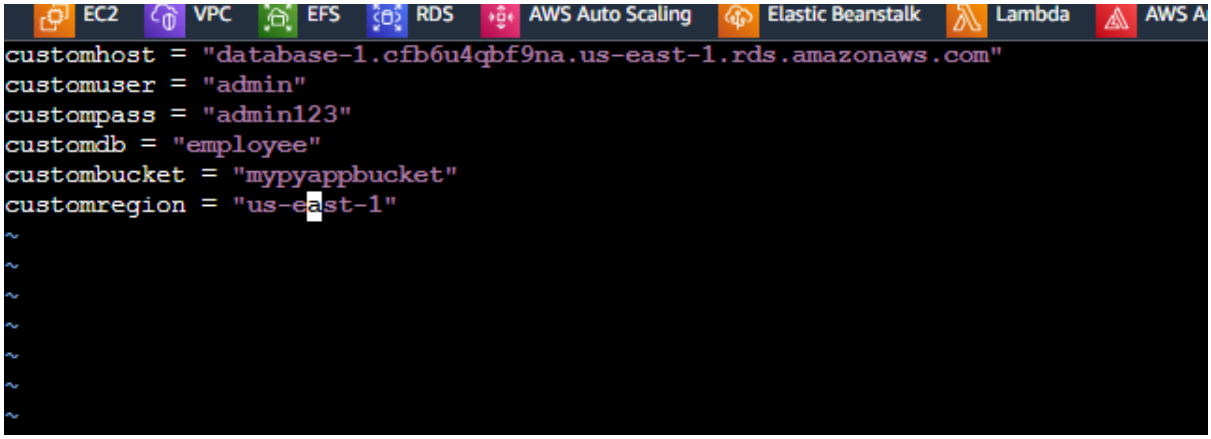


9. Create EC2 instance in private subnet (Py_App)
10. Create EC2 instance in public subnet to access private instance to update and do further configuration (Config_Ec2)

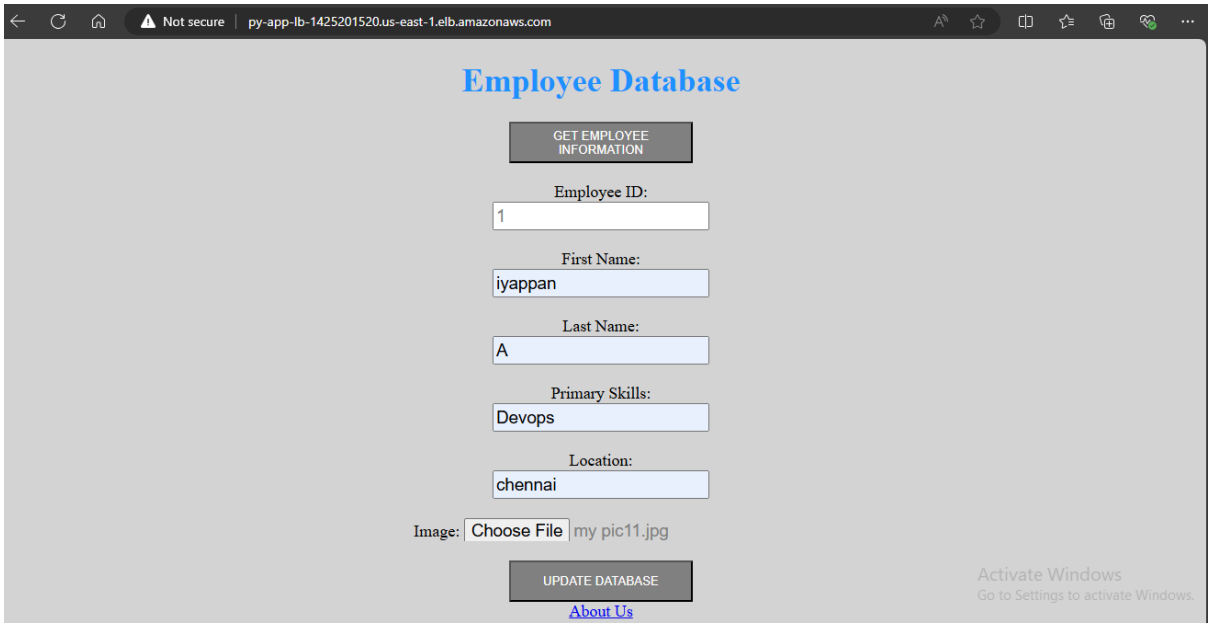


11. Create a target group include private instance association
12. Attach target group to load balancer , configure loadbalancer in public subnets availability zones.
13. Attach IAM role to Py_App Ec2 instance (private instance)
14. Login into Config_Ec2 instance (public instance)
15. Copy key_Pair into instance and try to SSH from public instance to private instance.
16. Install update and other dependencies in the private instance(Py_App instance)

17. Launch the app ensure the app configurations are pointed at databases correctly



18. Ping from browser and fill the employee form

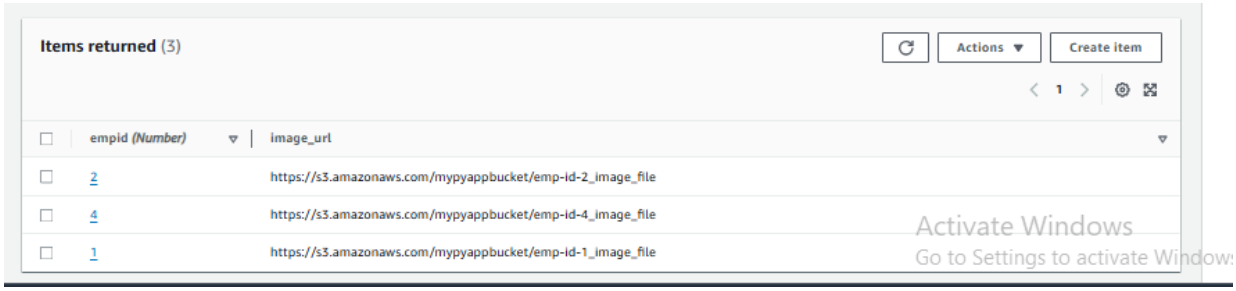


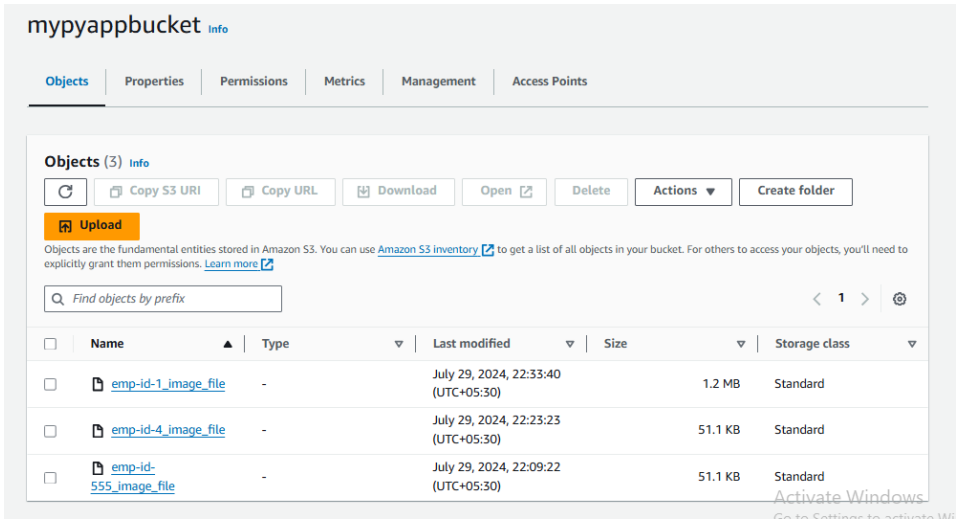
19.Check RDS, DynamoDB, and s3 bucket to ensure data storing.

```
mysql> use employee;
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
mysql> select * from employee;
+--------+-----------+-----------+---------------+-----------+
| emp_id | first_name | last_name  | primary_skills | location  |
+--------+-----------+-----------+---------------+-----------+
| 1      | iyappan    | A          | Devops         | chennai   |
| 1      | iyappan    | A          | Devops         | chennai   |
| 2      | valli      | asaithambi | cooking        | cuddalore |
+--------+-----------+-----------+---------------+-----------+
3 rows in set (0.00 sec)

mysql>
```





Hence the projected is completed and tested successfully.