**Deploying a Student-Portal container on AWS ECS Custom Image**

1- Create ECR repository

2- AWS Cli configure

3- Build custom image , tag it and push to AWS ECR repository (make sure S3 bucket is configured already on AWS else create one to store images)

4- Create RDS postgres database

5- Create ECS clutser

6- Create Task definition with custom image path on ECR / and use environment variable to define for RDS database credentials

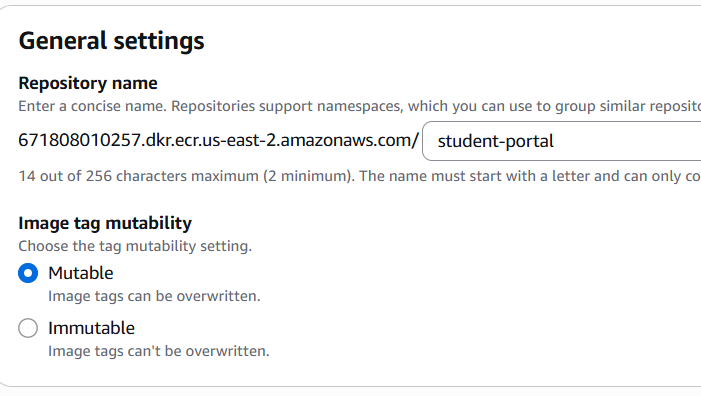
7- Create Service inlclude Application Load balancer with listener port 80 and Traffic port 8000

8- Make sure SG correctly define

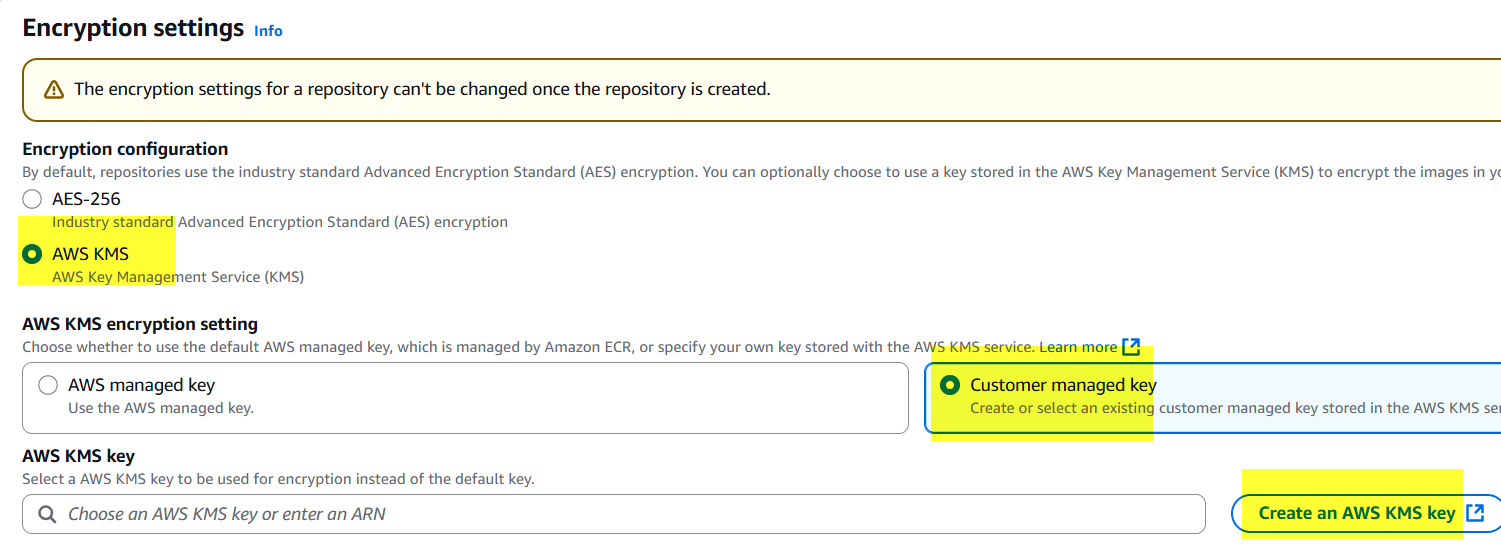
**# Create ECR Repository and build a custom image for DockerHUB**

ECR lets got to ECR repository

#create a repository

****

#Encrypt your image with AWS KMS key .

****

but we will use AES256 in this case.

best practice use AWS KMS key

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go to code source github and open student portal

file structure

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**build custom image on my codesource github machine**

docker build -t student-portal .

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**A close-up of a computer code

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**Tag the image you created**

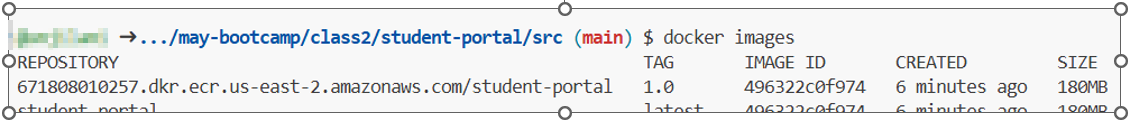
NOTE: always use particula format

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**you have to tag the image on local**

***docker tag student-portal 671808010257.dkr.ecr.us-east-2.amazonaws.com/student-portal:1.0***

****

**Create ECR Reporityry**

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**Now post this image to ECS repository**

Now send this image to ECR , but you have to authenticate local VM ( we use Key , but in real production we use custom OIDC connection)

**AWS configure now to authenticate CLI on Github codespace**

curl "https://awscli.amazonaws.com/awscli-exe-linux-x86\_64.zip" -o "awscliv2.zip"

unzip awscliv2.zip

sudo ./aws/install

**create Access key**

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Aws configure

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**to know if any S3 bucket is in AWS configure**

aws s3 ls



**to list ECR repositories**

aws ecr describe-repositories

**Push the image now to AWS ECR Repository from local**

docker images

docker push 671808010257.dkr.ecr.us-east-2.amazonaws.com/student-portal:1.0

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**ERROR : because** basic auth fails,

**To authenticate Docker to Amazon ECR repository follow below**

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aws ecr get-login-password --region region | docker login --username AWS --password-stdin aws\_account\_id.dkr.ecr.region.amazonaws.com

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**Now push the image to ECR again**

*docker push 671808010257.dkr.ecr.us-east-2.amazonaws.com/student-portal:1.0*

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**A screenshot of a computer

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**Create Cluster in ECS**

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**Now create a database:**

Now deploy local container **, go to RDS**

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**master password admin12345**

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**RDS Database is ready**

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**Now copy the hostname of database**

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**db host=student-portal.cjckkqc20ify.us-east-2.rds.amazonaws.com**

DB\_LINK=postgresql://postgres:admin12345@student-portal.cjckkqc20ify.us-east-2.rds.amazonaws.com:5432/student\_portal

**Now we shall create Task definition**

**A screenshot of a task definition configuration

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**givne the ECR name repository to run from container**

**A close-up of a computer screen

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**A close-up of a text

AI-generated content may be incorrect.**this is used in case we use with third party

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**Add environment variables**

environment

- DB\_LINK=postgresql://postgres:admin12345@student-portal.cjckkqc20ify.us-east-2.rds.amazonaws.com:5432/student\_portal

**Cluster Output**

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**Create a Service**

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**Use case "Cluster was down , autoscaling have multiple nodes and four nodes in one zone and four nodes in other zone . So AWS load balancing on basis of zone.**

**We use static application was down and then we disabled Turn on Availability Zone Balancing.**

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**If it is OFF then use NAT Gateway or VPC Endpoint**

Load balancer Enable service

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Healthcehck must be /login

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**2 Targets checking port 8000**

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Verification

**1- RDS is up**

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**2 - Cluster is UP**

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**Green means task is completed and running**

**If is blue then means it is under provisioning**

**Service is UP**

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**Task is running**

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**Container is running**

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**Container image**

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**Logs can be seen application is running ( else check and tshoot )**

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**3 - Loadbalancer is UP and healthy ports**

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**access DNS name from outside to test if application is Open**

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**Service is running now**

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**Check Application load balancer now ALB is created and UP**

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**Access the application directly without loadbalancer using public IP under Task definition to test if is open.**

**http://3.141.105.76:8000**

**A screen shot of a login page

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**Access the application is reachable via LB DNS name**

**http://student-loadbalancer-1635215499.us-east-2.elb.amazonaws.com**

**A screen shot of a login and password

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**Troubleshooting steps**

**1)**

**if db unable to connect , then make it public accessible then go to codespace and try to run the docker**

**docker run -td --name stpor -p 8000:8000 student-portal -e** DB\_LINK=postgresql://postgres:admin12345@student-portal.cjckkqc20ify.us-east-2.rds.amazonaws.com:5432/student\_portal

once it connect then run below command

**docker ps**

**docker logs**

**curl localhost:8000**

**2) Make sure credentials are correct in DB\_LINK**

**3) LB is correctly configured to correct traffic port**

**4) Health check path must be correct /login in this example**

**5) Security group must be verify the ports are correct i.g 8000 is ok for Application, 5432 for RDS DB , 80/443 for LB**

**6) Check the logs in cloudwatch to see the errors exactly**