FTRV Backend CICD for AWS EC2

CICD Framework

gitHub Actions

Cloud Provider

AWS Cloud

Infrastructure Requirement

Amazon EC2 instance (with security group)
Amazon ECR

Software Requirement

AMI (Amazon Machine Image) for EC2 : AMI Ubuntu 20.04

Installed dependencies :

- Docker
- Docker Compose
- Git
- aws cli

Provision the required Infrastructure.

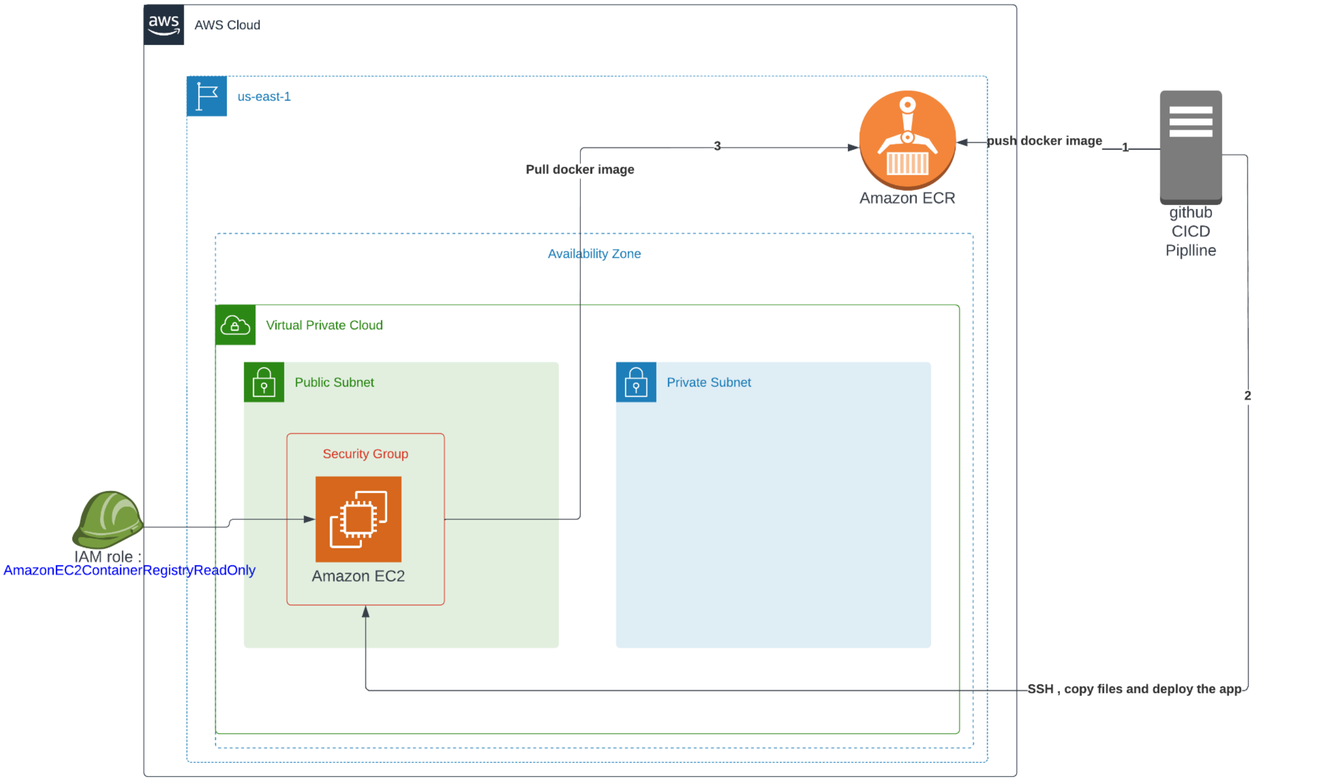
1. Provision AWS infrastructure like EC2 with Security Group and install the prerequisite package on ubuntu 20.04 (AMI). Use Terraform script found in datics / **ftrv-intranet-iac** github private repo, you can provision through github actions. Please see the readme document of that repo.

2. Add HTTP and HTTPS inbound rules in Security Group of EC2 to enable web traffic.

3. Create AWS ECR private repository to store the docker image, later cicd pipeline pushes the image automatically.

4. Create and attach IAM role with build in policy “AmazonEC2ContainerRegistryReadOnly” to EC2, required to do docker login and docker pull from ECR, when deploying the app on EC2.

CICD - FTRV Backend AWS EC2 Deployment Diagram



Configure and run Github Actions CICD workflow (file name: cicd-aws.yml)

1. Create/Update following Github Actions secrets

```
# For AWS Account configuration
AWS_SECRET_ACCESS_KEY
AWS_ACCESS_KEY_ID
AWS_REGION

# EC2 Instance variables needs to deploy the app
AWS_HOST
AWS_HOST_USER
AWS_HOST_SSH_KEY
AWS_HOST_SECURITY_GROUP_ID

# For AWS ECR Registry and Repository
MY_ECR_REGISTRY:
MY_ECR_REPOSITORY:


# For Node App env file (use when creating env file), set according to your
requirements.

JWT_SECRET
NODE_ENV
NODE_PORT
NODE_SERVER
POSTGRES_USER
POSTGRES_PASSWORD
POSTGRES_DB
POSTGRES_HOST
POSTGRES_PORT
SALT
SCHEMA_NAME
SESSION_SECRET
```

2. If you want to use Domain Name for backend, add record entry in **Route 53** with public ipv4 of EC2 and secondly update the following environment variables accordingly in **docker-compose-aws.yml** file in repo, these vars required by letsencrypt container image to generate the ssl certs for that domain and for the configuration of nginx web server.

   VIRTUAL_HOST: devcicd.ftrvcentralpoint.com
   LETSENCRYPT_HOST: devcicd.ftrvcentralpoint.com
   LETSENCRYPT_EMAIL: nm.nm@datics.ai

3. To run the workflow go to **Actions** tab of github, select **cicd_aws_ec2_ecr** and click on “Run Workflow” manually, there are ci and cd jobs to test, build, tag, push the image to ecr and do ssh to ec2 to deploy and run the application in containerize environment.