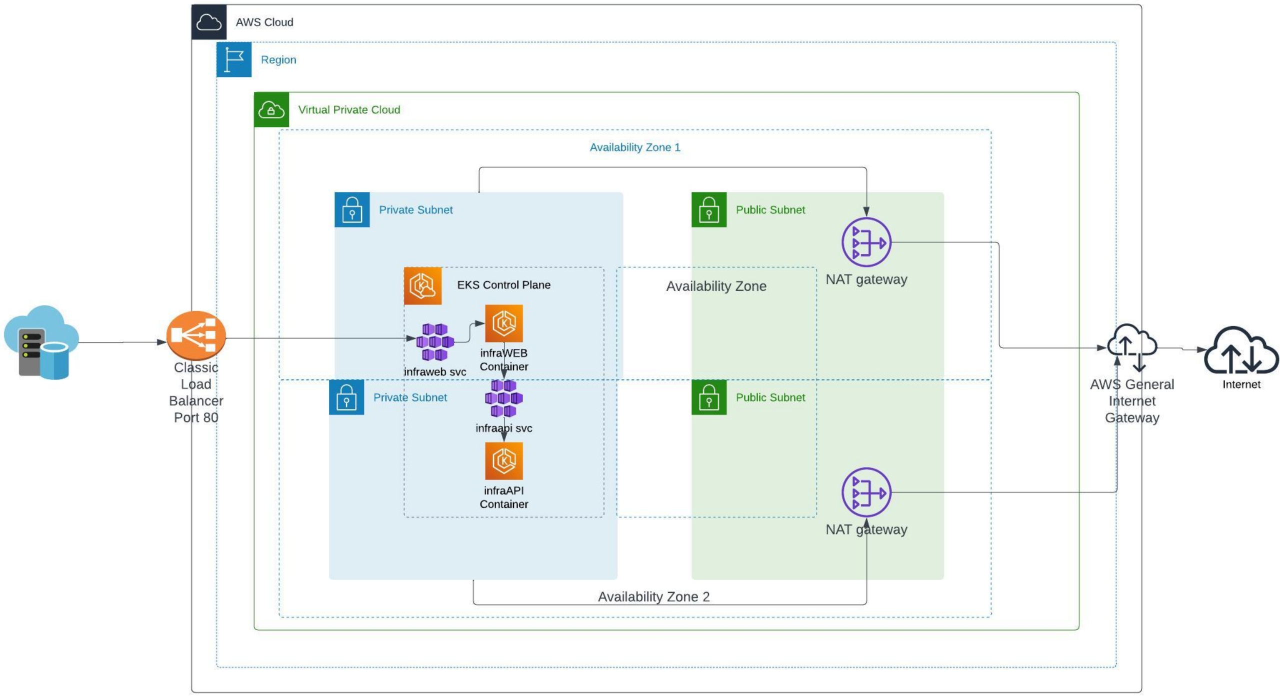
Weather App Documentation

High Level Architecture of Weather APP



Requirements

Assumed knowledge

- Basic overall knowledge of Kubernetes
- Basic knowledge of AWS and AWS EKS in particular
- Traversing among various objects in Kubernetes is good to have.

AWS Enviroinment Assumptions:

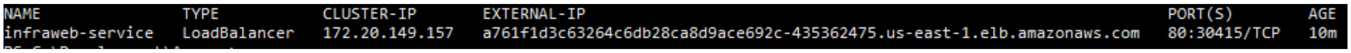
- The tool uses python to push the images to ecr so ecr permissions are required.
- The tool uses terraform to create the required infrastructure, such as vpc,subnets,natgws, eips,igw,routetable,eks,nodegroups, launch templates.
- The tool also creates the required IAM role for the cluster to use.
- thus the local environment must be configured with the right user/role which has sufficient IAM permissions.
- The tool depends on the configuration in the local environment, In case there is a rbac, the role needs to be assumed and the enviroiment needs to be set pre-deployment.

Local System

- Python 3.7 or higher
- Docker Desktop
- AWS CLI
- Terraform CLI
- Kubectl CLI

Details of how to start Weather app Orchestrator

1. Run the requirement.txt file
    a. `pip3 install -r requirement.txt`
2. Run the python file "deploy-api.py".
    a. `python3 deploy-api.py`
3. Once the tool completes copy the "External-ip" and paste it in your browser, Make sure its http and it doesnt default to https.



```
NAME               TYPE           CLUSTER-IP       EXTERNAL-IP                                                               PORT(S)        AGE
infraweb-service   LoadBalancer   172.20.149.157   a761f1d3c63264c6db28ca8d9ace692c-435362475.us-east-1.elb.amazonaws.com   80:30415/TCP   10m
```

The tool also has a feature of destroy to clean up the infrastructure on AWS

1. a. `python3 deploy-api.py destroy`

Note

i. The Statefile is locally preserved, To reduce the foot print of my assesment on AWS, please make sure its not accidentally deleted.
also, even though the networking components are spread across multiple AZs, I have used one replica-set and one node(nodegroup's asg is set to 1) to reduce the foot print.
ii. This solution can be made highly available if required.
iii. If the region and azs need to be modified, they are a part of variables.tf, make sure the region given in the terraform is same as the input in python,