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Project: Deploy Reditt Application on kubernetes Cluster thru Minikube

[Github + Docker + Kubernetes(Minikube)]

Reference Video: <a href="https://youtu.be/9tl0A_rwgu4">https://youtu.be/9tl0A_rwgu4</a> [Shubham]

Step 1: Application code files in Github

Step 2: Launch 2 EC2 (Ubuntu-T2Medium) servers 1st for [Docker], 2nd for [Minikube & Kubectl]

Step 3: Open Ports 22, 80, 443, 3000, 31000 ports in 1st EC2 and 22, 80 in 2nd

Step 4: Install docker on 1st EC2, (docker + minikube + kubectl) on 2nd EC2

Step 5: build docker image from Dockerfile on 1st EC2

Step 6: write all needed kubernetes related files [deployement, services....etc..yml files] on 2nd EC2

Step 7: run the below listed commands and check the Reditt App in browser {2nd EC2PublicIP:3000}

1. Deploy Reddit App on Kubernetes Mini kube cluster:

# Steps:-

# For Docker Installation on Docker-Server [1st EC2]
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sudo apt-get update
sudo apt-get install docker.io -y
sudo usermod -aG docker $USER && newgrp docker
git clone https://github.com/LondheShubham153/reddit-clone-k8s-ingress.git
Dockerfile [on 1st EC2]:
FROM node:19-alpine3.15
WORKDIR /reddit-clone
COPY . /reddit-clone
RUN npm install
EXPOSE 3000
CMD ["npm","run","dev"]
docker build -t <DockerHub Username>/<Imagename> .
docker build -t narian318/redit-app:1.0 .
docker login and give your username & password.
docker push <DockerHub Username>/<Imagename>
docker push narian318/redit-app:1.0
# For Minikube & Kubectl on Deployment-Server [2<sup>nd</sup> EC2]
curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
sudo install minikube-linux-amd64 /usr/local/bin/minikube
sudo snap install kubectl -- classic
minikube start --driver=docker
<u>In Deployment.yml file</u>:
apiVersion: apps/v1
kind: Deployment
metadata:
  name: reddit-clone-deployment
  labels:
    app: reddit-clone
spec:
  replicas: 2
 selector:
   matchLabels:
       app: reddit-clone
  template:
   metadata:
      labels:
        app: reddit-clone
     containers:
     - name: reddit-clone
      image: trainwithshubham/reddit-clone
```

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ports:
         - containerPort: 3000
In Service.yml File:
apiVersion: v1
kind: Service
metadata:
  name: reddit-clone-service
  labels:
    app: reddit-clone
spec:
  type: NodePort
  ports:
  - port: 3000
   targetPort: 3000
   nodePort: 31000
  selector:
   app: reddit-clone
kubectl apply -f Deployment.yml
kubectl apply -f Service.yml
kubectl get deployment & kubectl get services
<u>In ingress.yml file</u>:
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
name: ingress-reddit-app
spec:
 rules:
 - host: "domain.com"
 http:
   paths:
   - pathType: Prefix
    path: "/test"
    backend:
     service:
      name: reddit-clone-service
      port:
       number: 3000
 - host: "*.domain.com"
  http:
   paths:
   - pathType: Prefix
    path: "/test"
    backend:
     service:
      name: reddit-clone-service
      port:
       number: 3000
  minikube addons enable ingress
  minikube addons list
  kubectl apply -f ingress.yml
  kubectl get ingress ingress-reddit-app
  kubectl expose deployment reddit-clone-deployment --type=NodePort
  curl -L http://192.168.49.2:31000
  kubectl port-forward svc/reddit-clone-service 3000:3000 --address 0.0.0.0 &
   ==> check the Application with EC2 Public IP:3000 in browser
```