KUBERNETES PROJECT SETUP

DEPLOY 3 PODS IN k8 AND CHECK THE ENDPOINTS / VISUALISE k8 DASHBOARD

NOTE - Please copy the commands in notepad and apply on terminal

PROJECT2 LINK - https://github.com/praveen1994dec/kubernetes_java_deployment.git

STEP 1 –MINIKUBE AND DOCKER INSTALLATION ON AMAZON LINUX

1. Launch an instance from an Amazon Linux 2 or Amazon Linux AMI

2. Connect to your instance.

3. Update the packages and package caches you have installed on your instance.

```
yum update -y
```

4. Install the latest Docker Engine packages.

Amazon Linux 2 amazon-linux-extras install docker

```
yum install docker -y
```

5. Start the Docker service.

systemctl start docker

systemctl enable docker

6. Install Conntrack and Minikube:

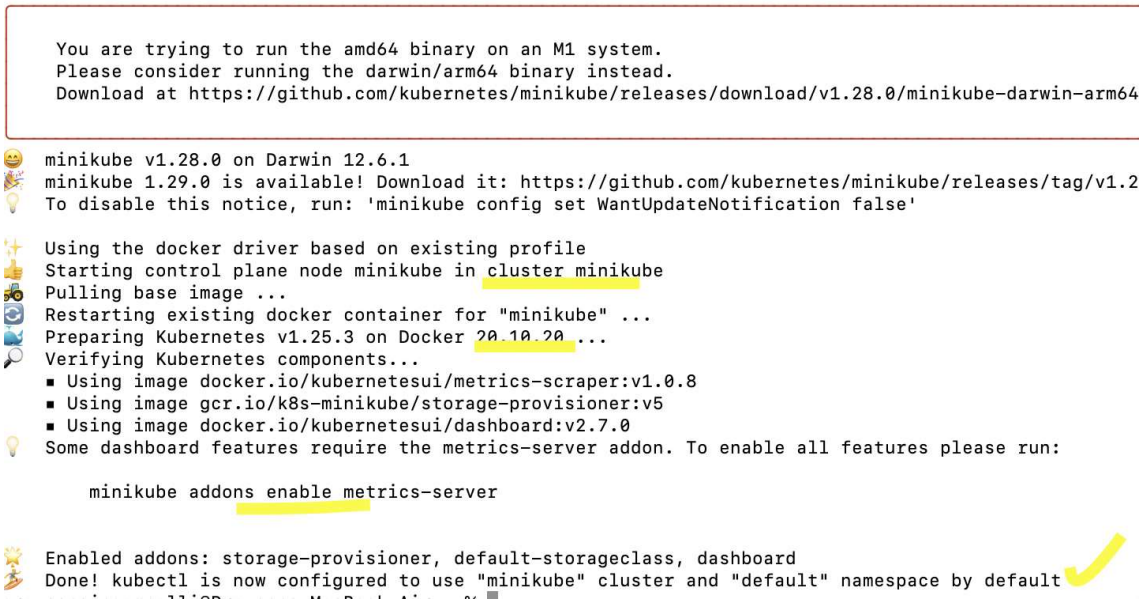
yum install conntrack -y

curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64

sudo install minikube-linux-amd64 /usr/local/bin/minikube

7. Start your MINIKUBE

/usr/local/bin/minikube start --force --driver=docker



STEP2 – INSTALL DOCKER/MAVEN/GIT/JAVA

DOCKER

```
yum install docker -y
systemctl  start docker
systemctl enable docker
```

MAVEN

```
cd /opt/
```

wget http://mirrors.estointernet.in/apache/maven/maven-3/3.6.3/binaries/apache-maven-3.6.3-bin.tar.gz

```
tar xvzf  apache-maven-3.6.3-bin.tar.gz
```

```
vi /etc/profile.d/maven.sh
```

```
export MAVEN_HOME=/opt/apache-maven-3.6.3
export PATH=$PATH:$MAVEN_HOME/bin
```

GIT

```
yum install git -y
```

JAVA

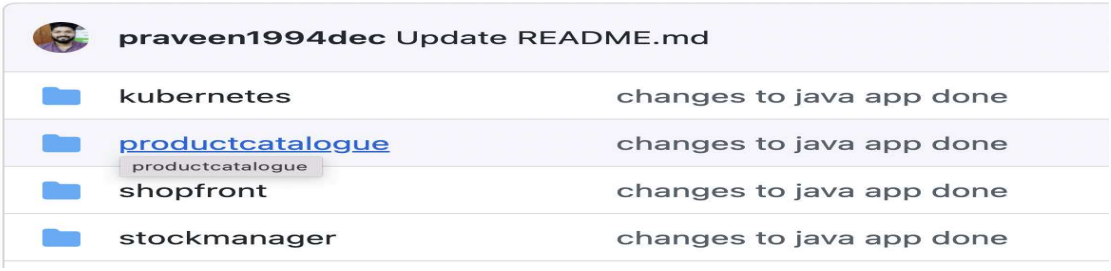
```
yum install java -y
```

STEP 3 – INSTALL KUBECTL

curl -o kubectl
https://amazon-eks.s3.us-west-2.amazonaws.com/1.20.4/2021-04-12/bin/linux/amd64/kubectl
chmod +x ./kubectl
mkdir -p $HOME/bin
cp ./kubectl $HOME/bin/kubectl
export PATH=$HOME/bin:$PATH
echo 'export PATH=$HOME/bin:$PATH' >> ~/.bashrc
source $HOME/.bashrc
kubectl version --short –client

STEP 4 –

git clone https://github.com/praveen1994dec/kubernetes_java_deployment.git



STEP 5 – IMPORTANT STEP

[3 SERVICES IN PROJECT]

SERVICE1 [Give your dockerhub ID in place of praveensingam1994]

```
cd shopfront/
mvn clean install -DskipTests
docker build -t praveensingam1994/shopfront:latest .
docker push praveensingam1994/shopfront:latest
```

SERVICE2 [Give your dockerhub ID in place of praveensingam1994]

```
cd productcatalogue/
mvn clean install -DskipTests
docker build -t praveensingam1994/productcatalogue:latest .
docker push praveensingam1994/productcatalogue:latest
```

SERVICE3 [Give your dockerhub ID in place of praveensingam1994]

```
cd stockmanager/
mvn clean install -DskipTests
docker build -t praveensingam1994/stockmanager:latest .
docker push praveensingam1994/stockmanager:latest
```

STEP 6 - GO TO KUBERNETES FOLDER IN SAME PROJECT

cd kubernetes

kubectl apply -f shopfront-service.yaml

kubectl apply -f productcatalogue-service.yaml

kubectl apply -f stockmanager-service.yaml

STEP 7 – kubectl get pods

```
praveensingampalli@Praveens-MacBook-Air ~ % kubectl get pods
NAME                              READY   STATUS    RESTARTS       AGE
productcatalogue-594ddfdf5f-l2hjr   1/1     Running   3 (101s ago)   25h
shopfront-d6dcddc7f-7qhw2           1/1     Running   2 (101s ago)   25h
stockmanager-676fc8968f-bb8kk       1/1     Running   91 (18s ago)   25h
```

STEP 8 – Hit the below command to **start** the kubernetes dashboard in EC2

/usr/local/bin/minikube dashboard

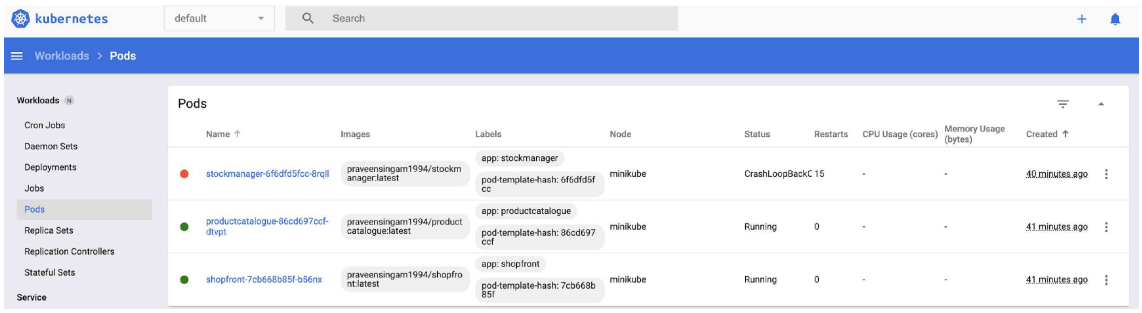
STEP 9 [IN NEW EC2 WINDOW] -

Open the EC2 in new window and set the PROXY

kubectl proxy --address='0.0.0.0' --accept-hosts='^*$'

STEP 9 - Hit in browser to view the dashboard

http://<EC2-IP>:8001/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/pod?namespace=default



[YOU WILL SEE YOUR APPS]

STEP 10 – Hit the below command for each service in different console of EC2

[EC2 LOGIN FIRST]
kubectl port-forward --address 0.0.0.0 svc/shopfront 8080:8010

[EC2 LOGIN FIRST]
kubectl port-forward --address 0.0.0.0 svc/productcatalogue 8090:8020

[EC2 LOGIN FIRST]

kubectl port-forward --address 0.0.0.0 svc/stockmanager 9008:8030

STEP 11 –

- http://<EC2IP>:8090/products
- [{"id":"1","name":"Widget","description":"Premium ACME Widgets","price":1.1999999999999995559107901499373838305473327636718 75},{"id":"2","name":"Sprocket","description":"Grade B sprockets","price":4.0999999999999964472863211994990706443786621093 75},{"id":"3","name":"Anvil","description":"Large Anvils","price":45.5},{"id":"4","name":"Cogs","description":"Grade Y cogs","price":1.8000000000000004440892098500626161694526672363281 25},{"id":"5","name":"Multitool","description":"Multitools","price":154.0999999999999943156581139191985130310058593 75}]

- http://<EC2IP>:9008/stocks

- [{"productId":"1","sku":"12345678","amountAvailable":5},{"productId":"2","sku":"34567890","amountAvailable":2},{"productId":"3","sku":"54326745","amountAvailable":999},{"productId":"4","sku":"93847614","amountAvailable":0},{"pro

ductId":"5","sku":"11856388","amountAvailable":1}]

STEP 12 – ANALYZE THE DASHBOARD

[IGNORE THE ERROR IN 1 POD, It is due to PROBES as discussed in class]

GO TO EACH SEGMENT ON LEFT HAND SIDE AND EXPLORE ☺ ☺