

MINIKUBE PROJECT2 SETUP

PROJECT2 LINK -

https://github.com/praveen1994dec/kubernetes_java_deployments.git

STEP 1:

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-extras install docker
```

```
yum install docker -y
```

5. Start the Docker service.

systemctl start docker

systemctl enable docker

6. Install Contrack 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

You are trying to run the amd64 binary on an M1 system.
Please consider running the darwin/arm64 binary instead.
Download at <https://github.com/kubernetes/minikube/releases/download/v1.28.0/minikube-darwin-arm64>

minikube v1.28.0 on Darwin 12.6.1
minikube 1.29.0 is available! Download it: <https://github.com/kubernetes/minikube/releases/tag/v1.29.0>
To disable this notice, run: 'minikube config set WantUpdateNotification false'

Using the docker driver based on existing profile
Starting control plane node minikube in cluster minikube

Pulling base image ...
Restarting existing docker container for "minikube" ...
Preparing Kubernetes v1.25.3 on Docker 20.10.20 ...

Verifying Kubernetes components...
■ Using image docker.io/kubernetesui/metrics-scraper:v1.0.8
■ Using image gcr.io/k8s-minikube/storage-provisioner:v5
■ Using image docker.io/kubernetesui/dashboard:v2.7.0

Some dashboard features require the metrics-server addon. To enable all features please run:

minikube addons enable metrics-server

Enabled addons: storage-provisioner, default-storageclass, dashboard
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default

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 [ And add the below both lines ]
```

```
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
```

	praveen1994dec Update README.md	
	kubernetes	changes to java app done
	productcatalogue	changes to java app done
	shopfront	changes to java app done
	stockmanager	changes to java app done

STEP 5 – IMPORTANT STEP

[3 SERVICES IN PROJECT]

NOTE - [Give your dockerhub ID in place of praveensingam1994]

SERVICE1

```
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-594ddfd5f-12hjr	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
```

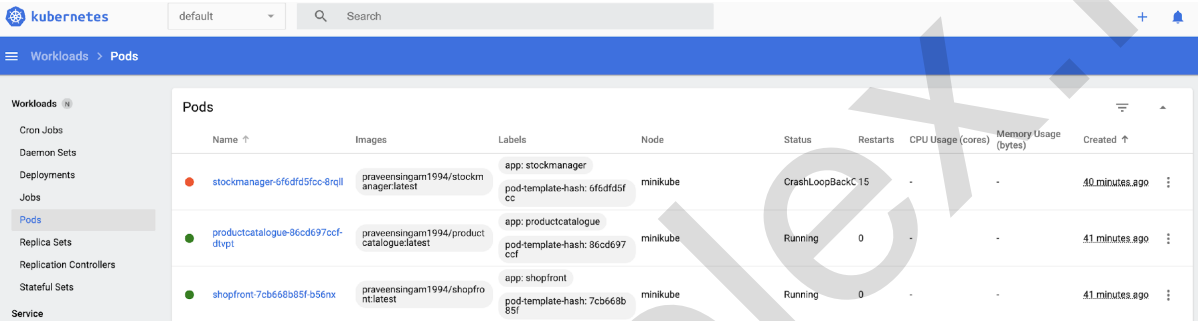
STEP 9 [IN NEW EC2 WINDOW] -

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>



Name ↑	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑
stockmanager-6f6dfd5f-8rql	praveensingam1994/stockmanager:latest	app: stockmanager pod-template-hash: 6f6dfd5f	minikube	CrashLoopBackOff	15	-	-	40 minutes ago
productcatalogue-86cd697cdf-vpt	praveensingam1994/productcatalogue:latest	app: productcatalogue pod-template-hash: 86cd697cdf	minikube	Running	0	-	-	41 minutes ago
shopfront-7cb668b85f-b56nx	praveensingam1994/shopfront:latest	app: shopfront pod-template-hash: 7cb668b85f	minikube	Running	0	-	-	41 minutes ago

[YOU WILL SEE YOUR APPS]

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

[EC2 LOGIN FIRST]

```
kubectrl port-forward --address 0.0.0.0 svc/shopfront  
8080:8010
```

[EC2 LOGIN FIRST]

```
kubectrl port-forward --address 0.0.0.0 svc/productcatalogue  
8090:8020
```

[EC2 LOGIN FIRST]

```
kubectrl 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": 1.1999999999999999555910790149937383830547332763671875}, {"id": "2", "name": "Sprocket", "description": "Grade B sprockets", "price": 4.09999999999999996447286321199499070644378662109375}, {"id": "3", "name": "Anvil", "description": "Large Anvils", "price": 45.5}, {"id": "4", "name": "Cogs", "description": "Grade Y cogs", "price": 1.8000000000000000000444089209850062616169452667236328125}, {"id": "5", "name": "Multitool", "description": "Multitools", "price": 154.099999999999994315658113919198513031005859375}]
- <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}, {"productId": "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]

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑
stockmanager-6f6dfdf5fc-8rql	praveensingam1994/stockmanager:latest	app: stockmanager pod-template-hash: 6f6dfdf5cc	minikube	CrashLoopBackOff	15	-	-	45 minutes ago
productcatalogue-86cd697ccf-dtvt	praveensingam1994/productcatalogue:latest	app: productcatalogue pod-template-hash: 86cd697ccf	minikube	Running	0	-	-	45 minutes ago
shopfront-7cb668b85f-b56nx	praveensingam1994/shopfront:latest	app: shopfront pod-template-hash: 7cb668b85f	minikube	Running	0	-	-	45 minutes ago

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