Day 3

Installing and setting up Kubernetes Minikube

1.mkdir my-docker-app
2.cd my-docker-app
3.touch Dockerfile
4.apt install npm
5.npm init -y
6.docker pull nithi1230/docker_hub:latest
7.docker build -t nithi1230/docker_hub:latest
8.docker ps
9.cd ..
10.minikube start
11.sudo nano nginx-deploymenr.yaml

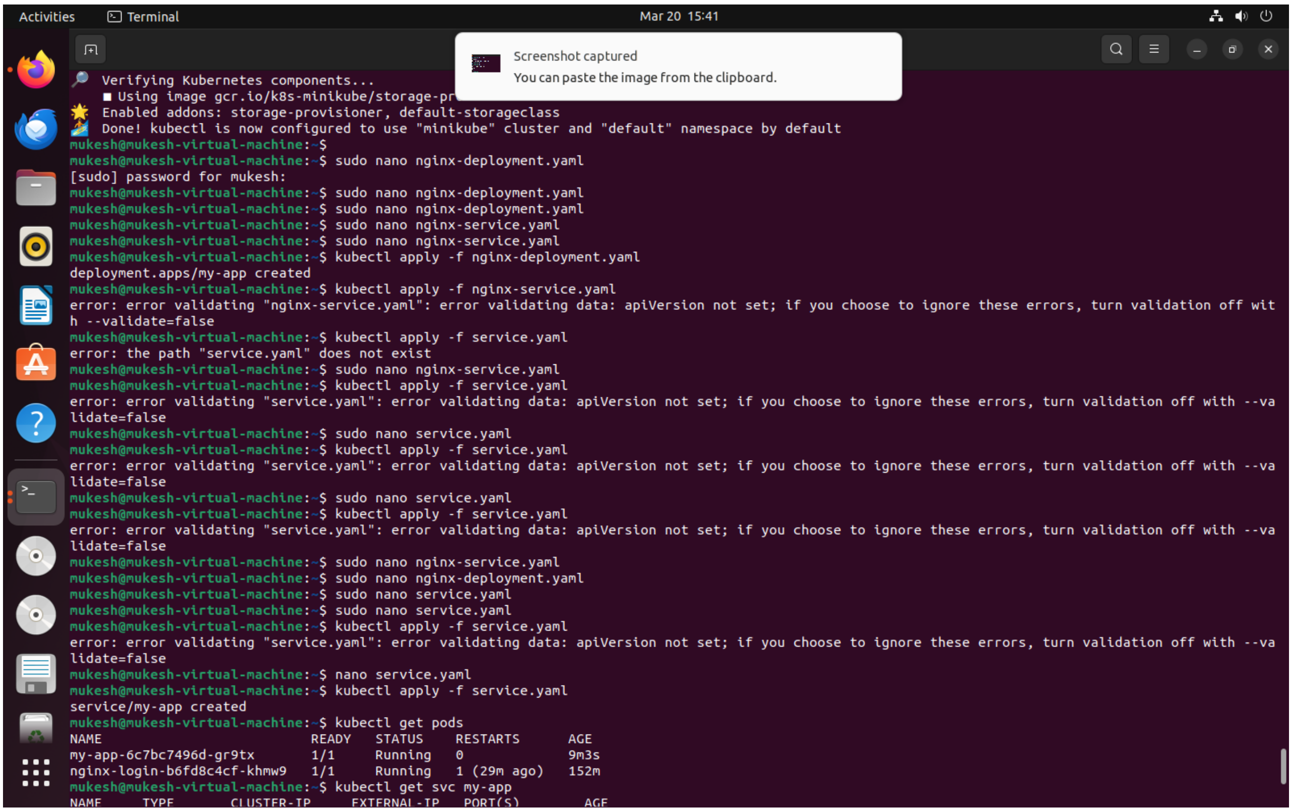
```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: my-app
spec:
  replicas: 1
  selector:
    matchLabels:
      app: my-app
  template:
    metadata:
      labels:
        app: my-app
    spec:
      containers:
      - name: my-app
        image: nithi1230/docker_hub:latest
        imagePullPolicy: IfNotPresent
        ports:
        - containerPort: 80
```

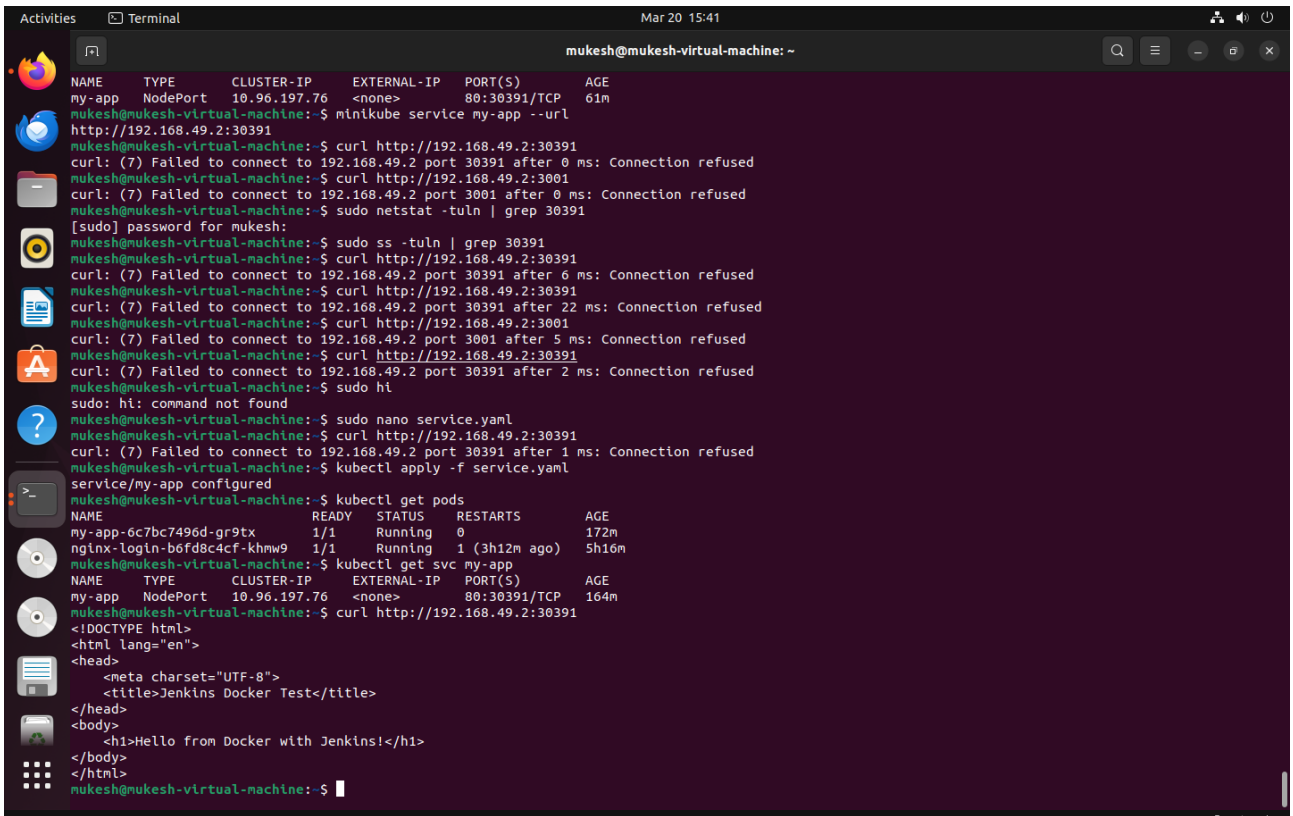
12.sudo nano service.yaml

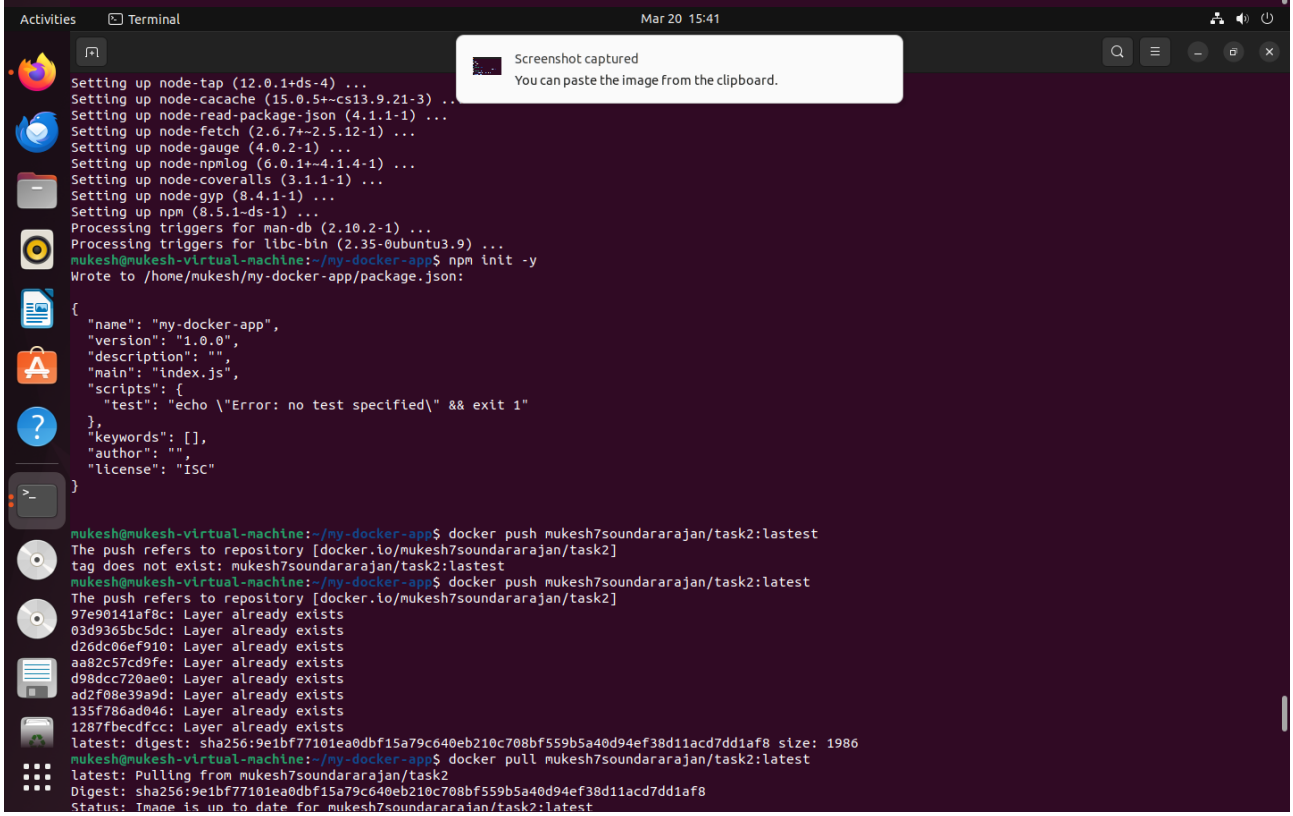
```
apiVersion: v1
kind: Service
metadata:
  name: my-app
  namespace: default
spec:
  type: NodePort  # Ensures external access via a specific port
  selector:
    app: my-app
  ports:
    - protocol: TCP
      port: 80       # Service port inside the cluster
      targetPort: 8080  # The container's port
      nodePort: 30391   # Externally accessible port
```

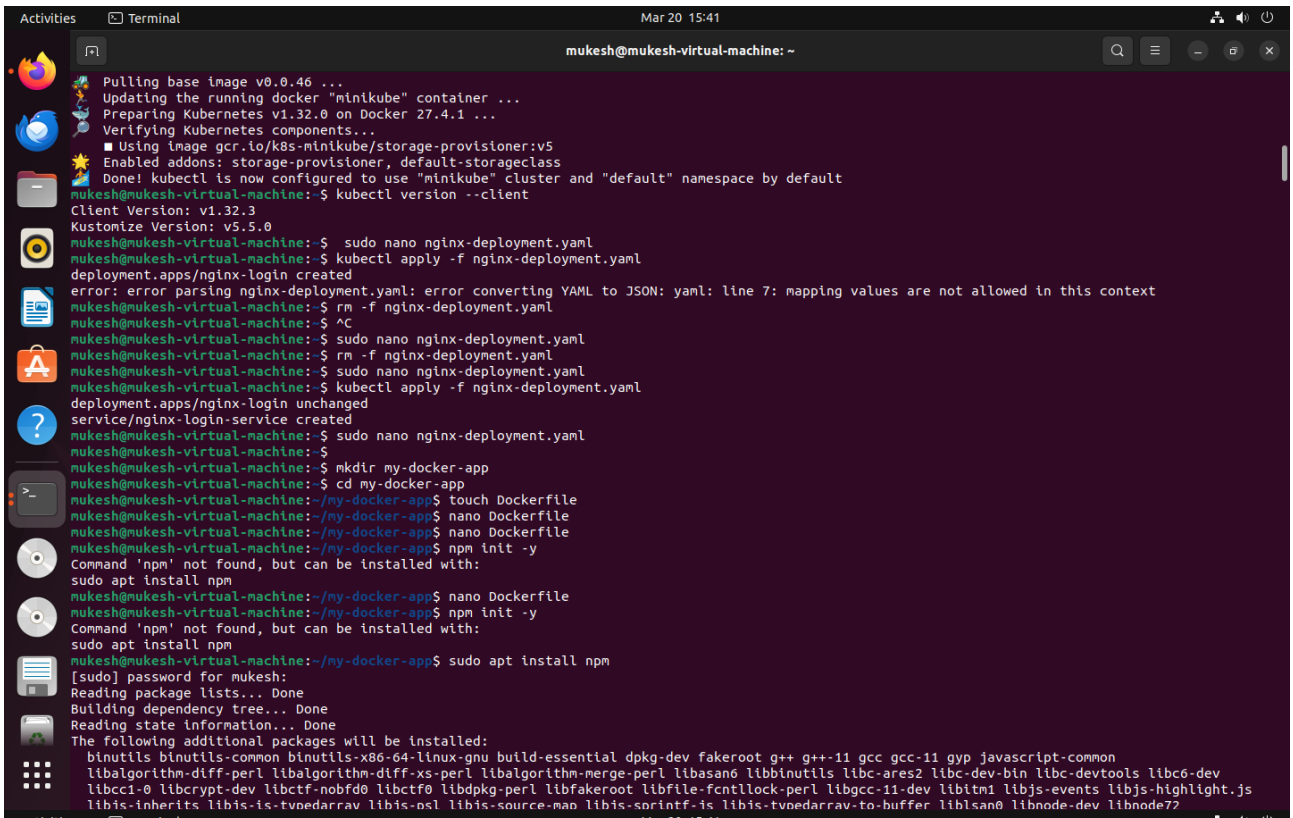
13.kubectl apply -f nginx-deploymenr.yaml

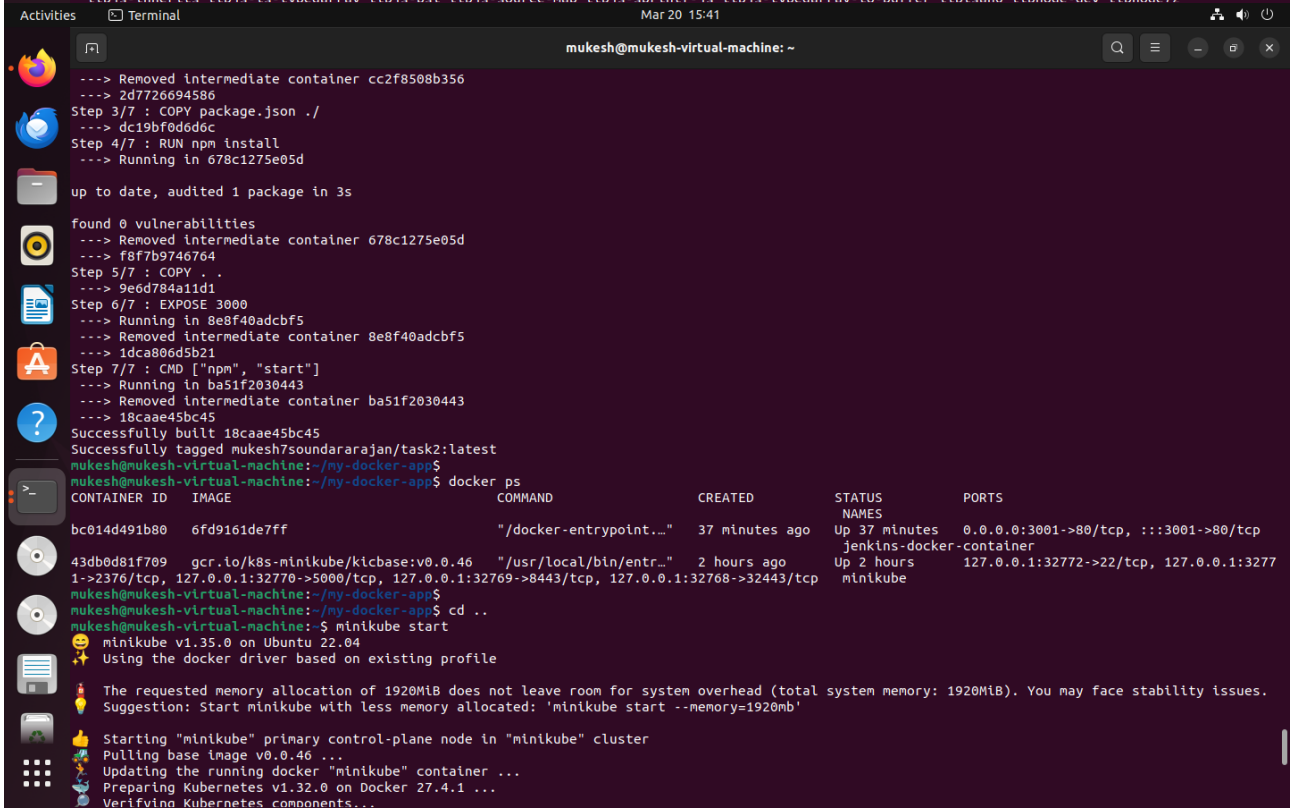
14.kubectl apply -f service.yaml
15.kubectl get pods
16.kubectl get svc my-app
17.minikube service my-app --url
18.curl <url>




Activities
Terminal
Mar 20 15:41
mukesh@mukesh-virtual-machine: ~
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
my-app NodePort 10.96.197.76 <none> 80:30391/TCP 61m
mukesh@mukesh-virtual-machine:~$ minikube service my-app --url
http://192.168.49.2:30391
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:30391
curl: (7) Failed to connect to 192.168.49.2 port 30391 after 0 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:3001
curl: (7) Failed to connect to 192.168.49.2 port 3001 after 0 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ sudo netstat -tuln | grep 30391
[sudo] password for mukesh:
mukesh@mukesh-virtual-machine:~$ sudo ss -tuln | grep 30391
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:30391
curl: (7) Failed to connect to 192.168.49.2 port 30391 after 6 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:30391
curl: (7) Failed to connect to 192.168.49.2 port 30391 after 22 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:3001
curl: (7) Failed to connect to 192.168.49.2 port 3001 after 5 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:30391
curl: (7) Failed to connect to 192.168.49.2 port 30391 after 2 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ sudo hi
sudo: hi: command not found
mukesh@mukesh-virtual-machine:~$ sudo nano service.yaml
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:30391
curl: (7) Failed to connect to 192.168.49.2 port 30391 after 1 ms: Connection refused
mukesh@mukesh-virtual-machine:~$ kubectl apply -f service.yaml
service/my-app configured
mukesh@mukesh-virtual-machine:~$ kubectl get pods
NAME READY STATUS RESTARTS AGE
my-app-6c7bc7496d-gr9tx 1/1 Running 0 172m
nginx-login-b6fd8c4cf-khmw9 1/1 Running 1 (3h12m ago) 5h16m
mukesh@mukesh-virtual-machine:~$ kubectl get svc my-app
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
my-app NodePort 10.96.197.76 <none> 80:30391/TCP 164m
mukesh@mukesh-virtual-machine:~$ curl http://192.168.49.2:30391
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Jenkins Docker Test</title>
</head>
<body>
<h1>Hello from Docker with Jenkins!</h1>
</body>
</html>
mukesh@mukesh-virtual-machine:~$


Activities
Terminal
Mar 20 15:41
Screenshot captured
You can paste the image from the clipboard.
Setting up node-tap (12.0.1+ds-4) ...
Setting up node-cacache (15.0.5+~cs13.9.21-3) ...
Setting up node-read-package-json (4.1.1-1) ...
Setting up node-fetch (2.6.7+~2.5.12-1) ...
Setting up node-gauge (4.0.2-1) ...
Setting up node-npmlog (6.0.1+~4.1.4-1) ...
Setting up node-coveralls (3.1.1-1) ...
Setting up node-gyp (8.4.1-1) ...
Setting up npm (8.5.1~ds-1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.9) ...
mukesh@mukesh-virtual-machine:~/my-docker-app$ npm init -y
Wrote to /home/mukesh/my-docker-app/package.json:
{
"name": "my-docker-app",
"version": "1.0.0",
"description": "",
"main": "index.js",
"scripts": {
"test": "echo \"Error: no test specified\" && exit 1"
},
"keywords": [],
"author": "",
"license": "ISC"
}
mukesh@mukesh-virtual-machine:~/my-docker-app$ docker push mukesh7soundararajan/task2:lastest
The push refers to repository [docker.io/mukesh7soundararajan/task2]
tag does not exist: mukesh7soundararajan/task2:lastest
mukesh@mukesh-virtual-machine:~/my-docker-app$ docker push mukesh7soundararajan/task2:latest
The push refers to repository [docker.io/mukesh7soundararajan/task2]
97e90141af8c: Layer already exists
03d9365bc5dc: Layer already exists
d26dc06ef910: Layer already exists
aa82c57cd9fe: Layer already exists
d98dcc720ae0: Layer already exists
ad2f08e39a9d: Layer already exists
135f786ad046: Layer already exists
1287fbecdfcc: Layer already exists
latest: digest: sha256:9e1bf77101ea0dbf15a79c640eb210c708bf559b5a40d94ef38d11acd7dd1af8 size: 1986
mukesh@mukesh-virtual-machine:~/my-docker-app$ docker pull mukesh7soundararajan/task2:latest
latest: Pulling from mukesh7soundararajan/task2
Digest: sha256:9e1bf77101ea0dbf15a79c640eb210c708bf559b5a40d94ef38d11acd7dd1af8
Status: Image is up to date for mukesh7soundararajan/task2:latest


Activities
Terminal
Mar 20 15:41
mukesh@mukesh-virtual-machine: ~
Pulling base image v0.0.46 ...
Updating the running docker "minikube" container ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...
Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: storage-provisioner, default-storageclass
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
mukesh@mukesh-virtual-machine:~$ kubectl version --client
Client Version: v1.32.3
Kustomize Version: v5.5.0
mukesh@mukesh-virtual-machine:~$ sudo nano nginx-deployment.yaml
mukesh@mukesh-virtual-machine:~$ kubectl apply -f nginx-deployment.yaml
deployment.apps/nginx-login created
error: error parsing nginx-deployment.yaml: error converting YAML to JSON: yaml: line 7: mapping values are not allowed in this context
mukesh@mukesh-virtual-machine:~$ rm -f nginx-deployment.yaml
mukesh@mukesh-virtual-machine:~$ ^C
mukesh@mukesh-virtual-machine:~$ sudo nano nginx-deployment.yaml
mukesh@mukesh-virtual-machine:~$ rm -f nginx-deployment.yaml
mukesh@mukesh-virtual-machine:~$ sudo nano nginx-deployment.yaml
mukesh@mukesh-virtual-machine:~$ kubectl apply -f nginx-deployment.yaml
deployment.apps/nginx-login unchanged
service/nginx-login-service created
mukesh@mukesh-virtual-machine:~$ sudo nano nginx-deployment.yaml
mukesh@mukesh-virtual-machine:~$
mukesh@mukesh-virtual-machine:~$ mkdir my-docker-app
mukesh@mukesh-virtual-machine:~$ cd my-docker-app
mukesh@mukesh-virtual-machine:~/my-docker-app$ touch Dockerfile
mukesh@mukesh-virtual-machine:~/my-docker-app$ nano Dockerfile
mukesh@mukesh-virtual-machine:~/my-docker-app$ nano Dockerfile
mukesh@mukesh-virtual-machine:~/my-docker-app$ npm init -y
Command 'npm' not found, but can be installed with:
sudo apt install npm
mukesh@mukesh-virtual-machine:~/my-docker-app$ nano Dockerfile
mukesh@mukesh-virtual-machine:~/my-docker-app$ npm init -y
Command 'npm' not found, but can be installed with:
sudo apt install npm
mukesh@mukesh-virtual-machine:~/my-docker-app$ sudo apt install npm
[sudo] password for mukesh:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
binutils binutils-common binutils-x86-64-linux-gnu build-essential dpkg-dev fakeroot g++ g++-11 gcc gcc-11 gyp javascript-common
libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl libasan6 libbinutils libc-ares2 libc-dev-bin libc-devtools libc6-dev
libcc1-0 libcrypt-dev libctf-nobfd0 libctf0 libdpkg-perl libfakeroot libfile-fcntllock-perl libgcc-11-dev libitm1 libjs-events libjs-highlight.js
libjs-inherits libjs-is-typedarray libjs-psl libjs-source-map libjs-sprintf-js libjs-typedarray-to-buffer liblsan0 libnode-dev libnode72


Activities
Terminal
Mar 20 15:41
mukesh@mukesh-virtual-machine: ~
---> Removed intermediate container cc2f8508b356
---> 2d7726694586
Step 3/7 : COPY package.json ./
---> dc19bf0d6d6c
Step 4/7 : RUN npm install
---> Running in 678c1275e05d
up to date, audited 1 package in 3s
found 0 vulnerabilities
---> Removed intermediate container 678c1275e05d
---> f8f7b9746764
Step 5/7 : COPY . .
---> 9e6d784a11d1
Step 6/7 : EXPOSE 3000
---> Running in 8e8f40adcbf5
---> Removed intermediate container 8e8f40adcbf5
---> 1dca806d5b21
Step 7/7 : CMD ["npm", "start"]
---> Running in ba51f2030443
---> Removed intermediate container ba51f2030443
---> 18caae45bc45
Successfully built 18caae45bc45
Successfully tagged mukesh7soundararajan/task2:latest
mukesh@mukesh-virtual-machine:~/my-docker-app$
mukesh@mukesh-virtual-machine:~/my-docker-app$ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
bc014d491b80 6fd9161de7ff "/docker-entrypoint.…" 37 minutes ago Up 37 minutes 0.0.0.0:3001->80/tcp, :::3001->80/tcp jenkins-docker-container
43db0d81f709 gcr.io/k8s-minikube/kicbase:v0.0.46 "/usr/local/bin/entr…" 2 hours ago Up 2 hours 127.0.0.1:32772->22/tcp, 127.0.0.1:32771->2376/tcp, 127.0.0.1:32770->5000/tcp, 127.0.0.1:32769->8443/tcp, 127.0.0.1:32768->32443/tcp minikube
mukesh@mukesh-virtual-machine:~/my-docker-app$
mukesh@mukesh-virtual-machine:~/my-docker-app$ cd ..
mukesh@mukesh-virtual-machine:~$ minikube start
minikube v1.35.0 on Ubuntu 22.04
Using the docker driver based on existing profile
The requested memory allocation of 1920MiB does not leave room for system overhead (total system memory: 1920MiB). You may face stability issues.
Suggestion: Start minikube with less memory allocated: 'minikube start --memory=1920mb'
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Updating the running docker "minikube" container ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...


ivities
Firefox Web Browser
Mar 20 15:42
Restore Sessi
(no subject) -
chatgpt.com/
DeepSeek
DeepSeek - In
task2 #6 Cons
Jenkins Docker T
Jenkins D
192.168.49.2:30391
Hello from Docker with Jenkins!