FINAL PROJECT

DevOps-Day06:

JAVA APPLICATION DEPLOYEMENT IN MINIKUBE

PIPELINE:

```
pipeline {
   agent any

   stages {
      stage('SCM') {
         steps {
            git branch: 'main', url: 'https://github.com/MugeshS-04/guvidevopsday1.git'
         }
      }
      stage('Build-clean') {
         steps{
            sh 'mvn clean'
         }
      }
           stage('Build-validate') {
         steps{
                     sh 'mvn validate'
         }
      }
```

```
        stage('Build-compile') {
      steps{
                sh 'mvn compile'
      }
    }
        stage('Build-test') {
      steps{
                sh 'mvn test'
      }
    }
        stage('Build-package') {
      steps{
                sh 'mvn package'
      }
    }
    stage('build to images') {
      steps {
      script{
        sh "docker build -t mugeshs04/webapplication ."
      }
      }
    }
    stage('docker push hub') {
      steps {
      script{
        withDockerRegistry(credentialsId: 'docker-hub-cred', url:
'https://index.docker.io/v1/') {
         sh 'docker push mugeshs04/webapplication'
```

```
        }
        }
        }
      }
      stage('deploy webapp') {
        steps{
          withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube', credentialsId: 'minikube-cred', namespace: '', restrictKubeConfigAccess: false, serverUrl: 'https://192.168.39.226:8443') {
              sh 'kubectl apply -f deployment.yml --validate=false'
          }
        }

  }
}
}
```

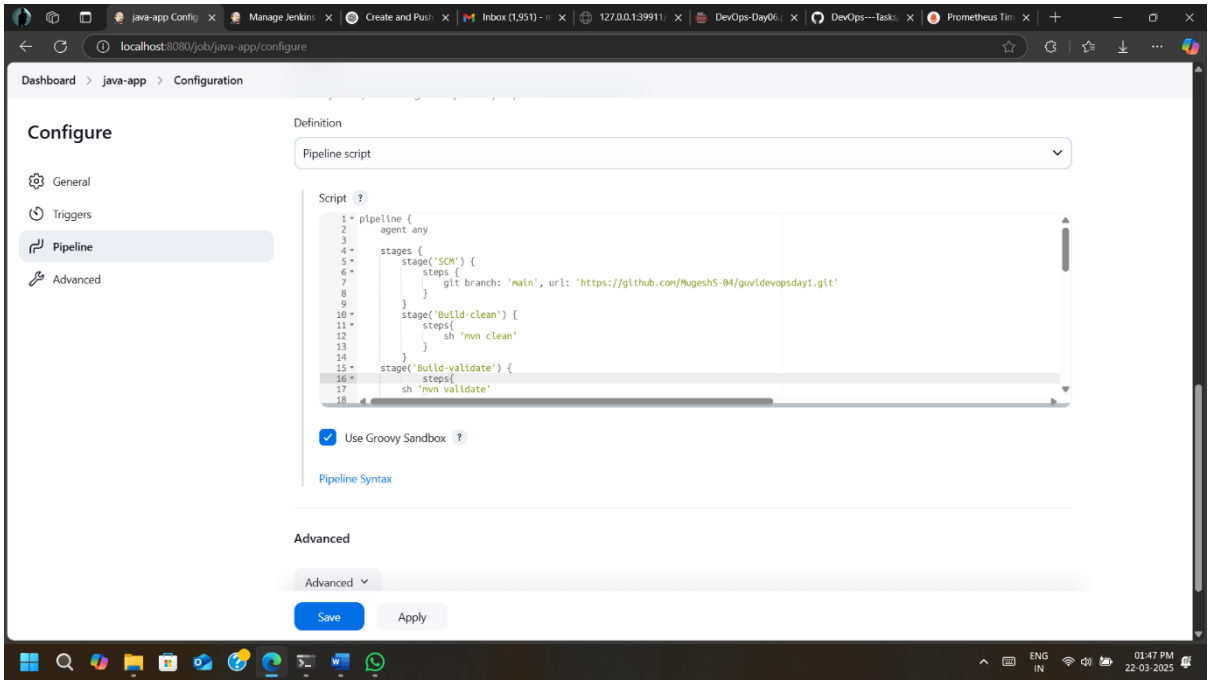
Deployment.yml

```
apiVersion: apps/v1
kind: Deployment
metadata:
 name: my-deploy
 labels:
  name: my-deploy
spec:
 replicas: 1
 selector:
  matchLabels:
```

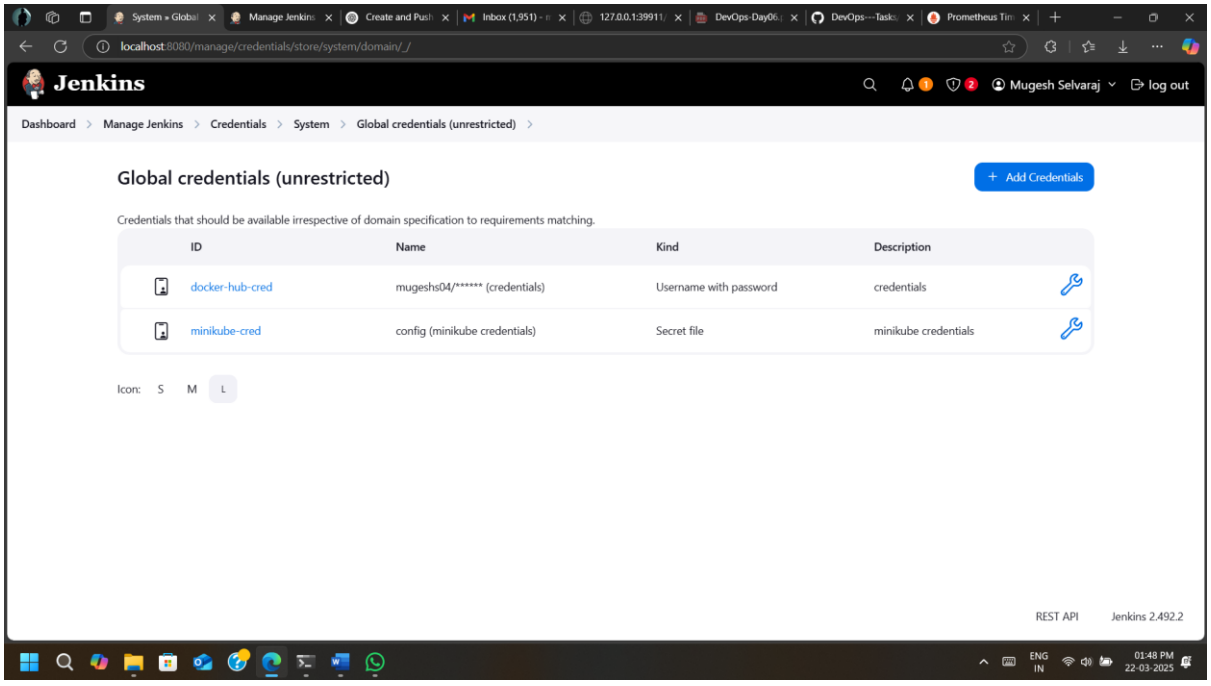
```
    apptype: web-backend
  strategy:
   type: RollingUpdate
  template:
   metadata:
    labels:
     apptype: web-backend
   spec:
    containers:
    - name: my-app
     image: mugeshs04/guvidevopsday1
     ports:
     - containerPort: 9000


---


apiVersion: v1
kind: Service
metadata:
  name: my-service
  labels:
    app: my-service
spec:
  type: NodePort
  ports:
    - port: 9000
      targetPort: 8080
      nodePort: 30002
```

selector:

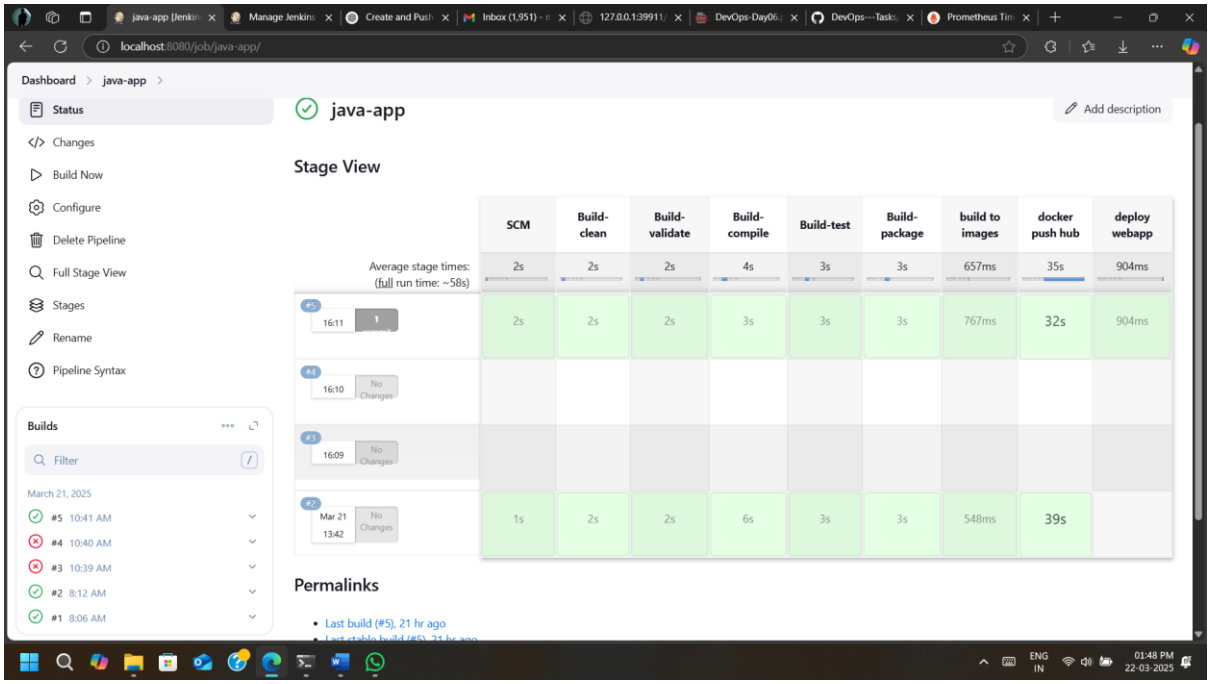
apptype: web-backend



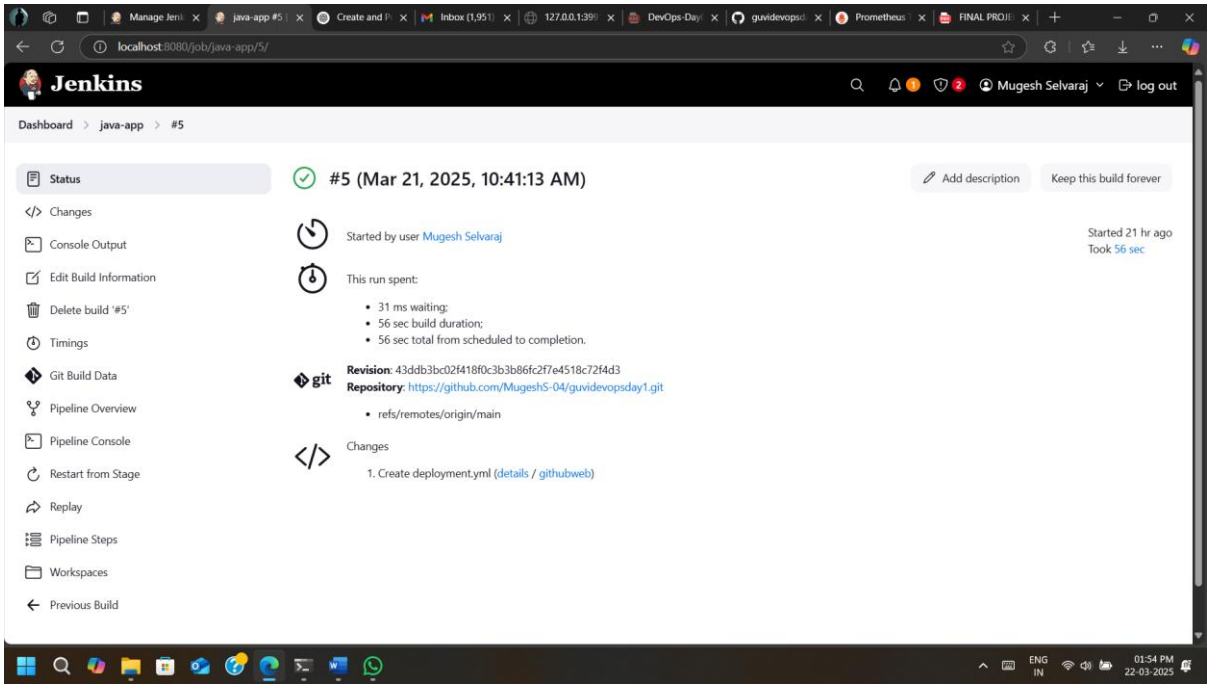
Credentials:



Stage View:


localhost:8080/job/java-app/
Dashboard
java-app
Status
Changes
Build Now
Configure
Delete Pipeline
Full Stage View
Stages
Rename
Pipeline Syntax
Builds
Filter
March 21, 2025
#5 10:41 AM
#4 10:40 AM
#3 10:39 AM
#2 8:12 AM
#1 8:06 AM
java-app
Add description
Stage View
SCM
Build-clean
Build-validate
Build-compile
Build-test
Build-package
build to images
docker push hub
deploy webapp
Average stage times:
(full run time: ~58s)
2s 2s 2s 4s 3s 3s 657ms 35s 904ms
#5 16:11 2s 2s 2s 3s 3s 3s 767ms 32s 904ms
#4 16:10 No Changes
#3 16:09 No Changes
#2 Mar 21 13:42 No Changes 1s 2s 2s 6s 3s 3s 548ms 39s
Permalinks
Last build (#5), 21 hr ago
ENG IN
01:48 PM
22-03-2025

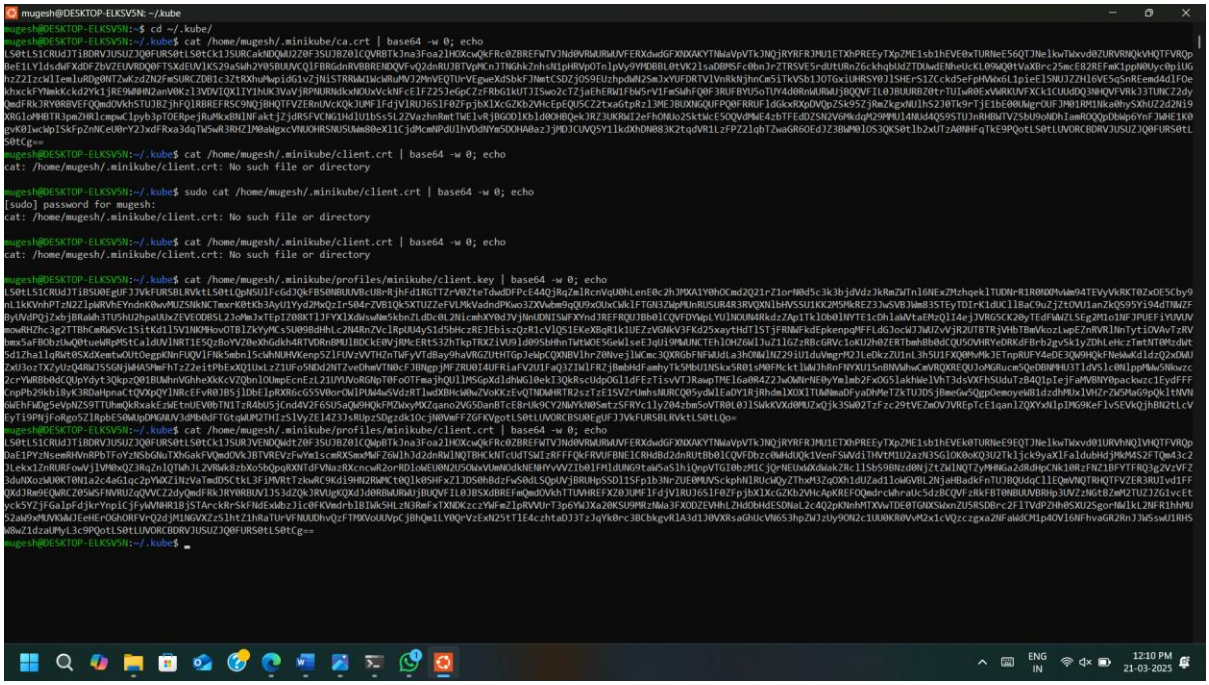
Status:

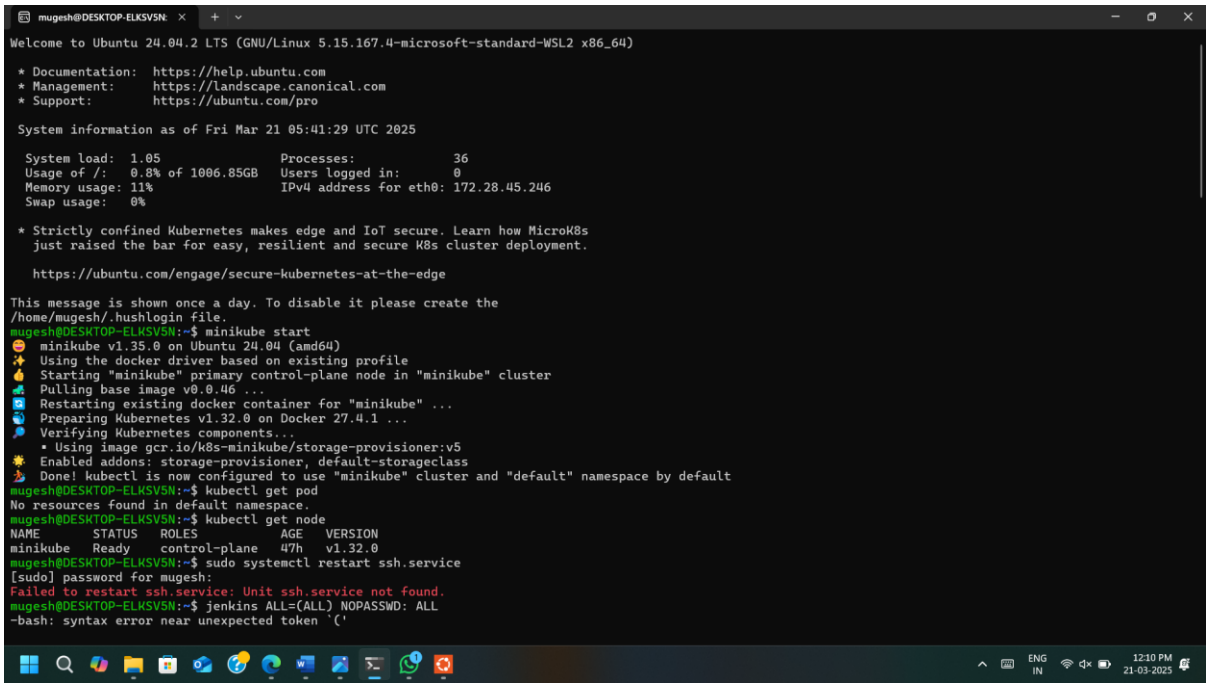


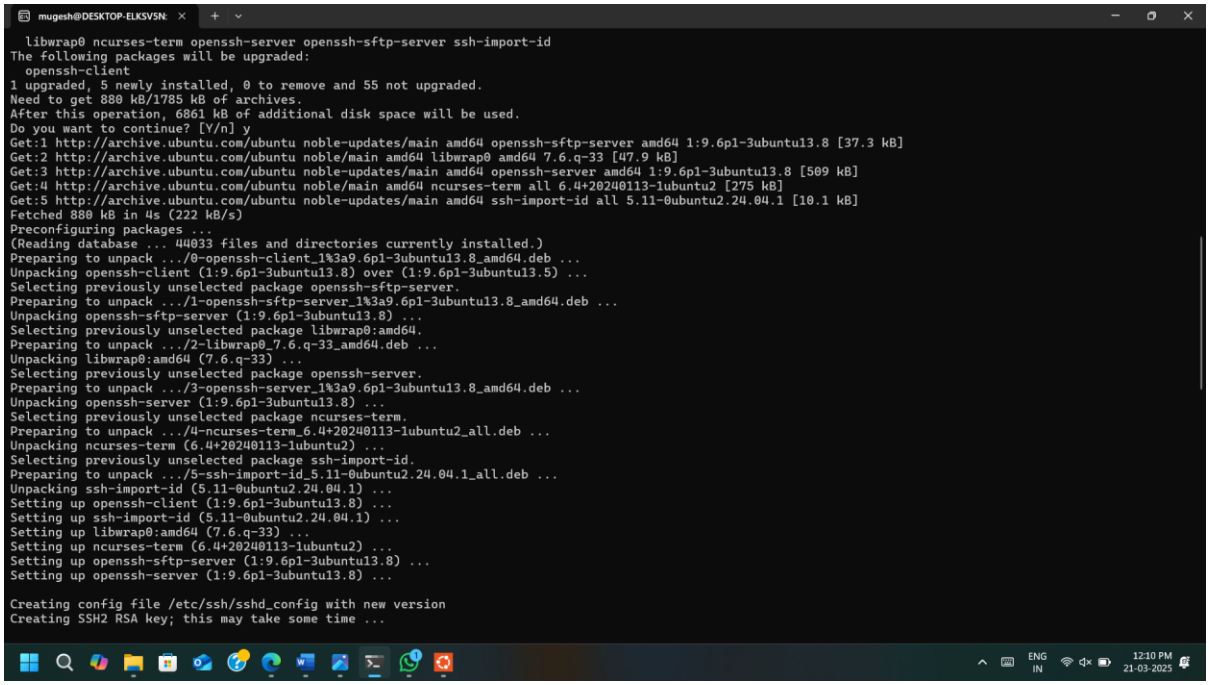
Dashboard > java-app > #5

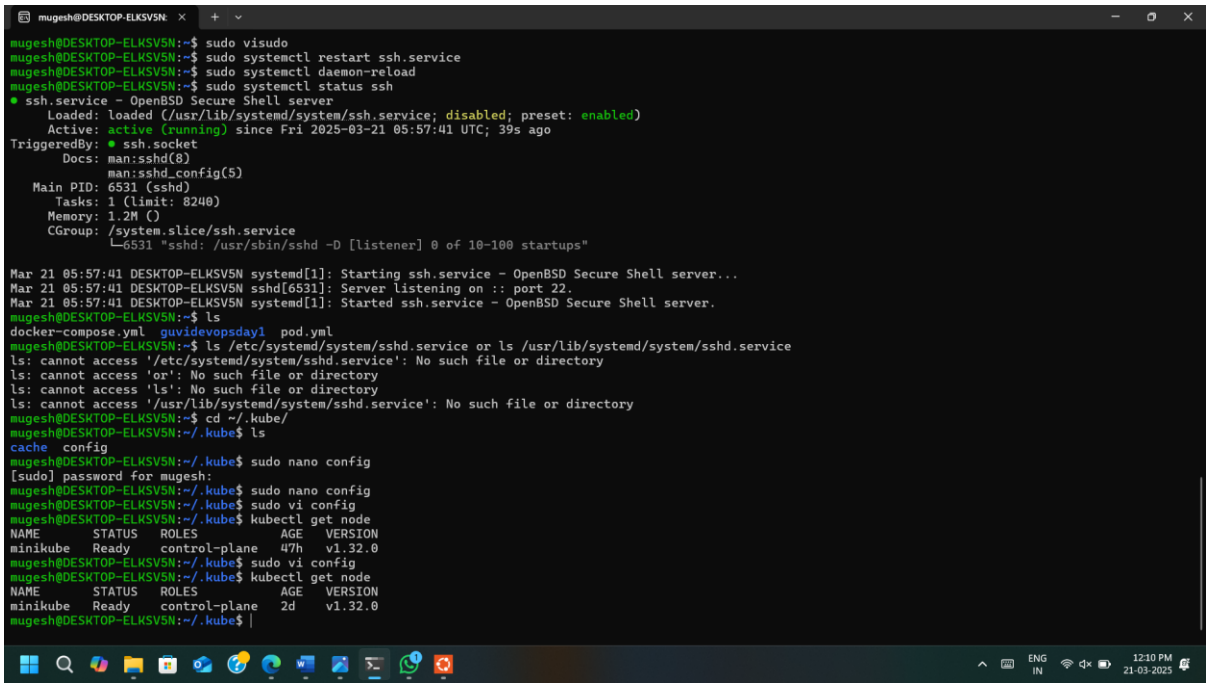
```
bc05267c613b: Layer already exists
3359bc3d7a6a: Layer already exists
f844dcf94898: Layer already exists
4b7c01ed0534: Layer already exists
39cf0ac89a5a: Layer already exists
17725206dbaf: Pushed
latest: digest: sha256:dec123b49c27064987f9f8f781a3edeeb5a3651ae3fc18e558527a0e780728d9 size: 2409
[Pipeline] }
[Pipeline] // withDockerRegistry
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (deploy webapp)
[Pipeline] withKubeConfig
[Pipeline] {
[Pipeline] sh
+ kubectl apply -f deployment.yml --validate=false
deployment.apps/my-deploy created
service/my-service created
[Pipeline] }
[kubernetes-cli] kubectl configuration cleaned up
[Pipeline] // withKubeConfig
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

Minikube commands:


mugesh@DESKTOP-ELKSV5N: ~/.kube
mugesh@DESKTOP-ELKSV5N:~$ cd ~/.kube/
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/ca.crt | base64 -w 0; echo
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/client.crt | base64 -w 0; echo
cat: /home/mugesh/.minikube/client.crt: No such file or directory
mugesh@DESKTOP-ELKSV5N:~/.kube$ sudo cat /home/mugesh/.minikube/client.crt | base64 -w 0; echo
[sudo] password for mugesh:
cat: /home/mugesh/.minikube/client.crt: No such file or directory
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/client.crt | base64 -w 0; echo
cat: /home/mugesh/.minikube/client.crt: No such file or directory
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/profiles/minikube/client.key | base64 -w 0; echo
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/client.crt | base64 -w 0; echo
cat: /home/mugesh/.minikube/client.crt: No such file or directory
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/profiles/minikube/client.crt | base64 -w 0; echo
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/client.crt | base64 -w 0; echo
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/profiles/minikube/client.crt | base64 -w 0; echo
mugesh@DESKTOP-ELKSV5N:~/.kube$ cat /home/mugesh/.minikube/client.crt | base64 -w 0; echo
12:10 PM
21-03-2025


mugesh@DESKTOP-ELKSV5N:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 5.15.167.4-microsoft-standard-WSL2 x86_64)
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro
System information as of Fri Mar 21 05:41:29 UTC 2025
System load: 1.05 Processes: 36
Usage of /: 0.8% of 1006.85GB Users logged in: 0
Memory usage: 11% IPv4 address for eth0: 172.28.45.246
Swap usage: 0%
* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
just raised the bar for easy, resilient and secure K8s cluster deployment.
https://ubuntu.com/engage/secure-kubernetes-at-the-edge
This message is shown once a day. To disable it please create the
/home/mugesh/.hushlogin file.
mugesh@DESKTOP-ELKSV5N:~$ minikube start
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Restarting existing docker container for "minikube" ...
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
mugesh@DESKTOP-ELKSV5N:~$ kubectl get pod
No resources found in default namespace.
mugesh@DESKTOP-ELKSV5N:~$ kubectl get node
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 47h v1.32.0
mugesh@DESKTOP-ELKSV5N:~$ sudo systemctl restart ssh.service
[sudo] password for mugesh:
Failed to restart ssh.service: Unit ssh.service not found.
mugesh@DESKTOP-ELKSV5N:~$ jenkins ALL=(ALL) NOPASSWD: ALL
-bash: syntax error near unexpected token `('
12:10 PM
21-03-2025


mugesh@DESKTOP-ELKSV5N:
libwrap0 ncurses-term openssh-sftp-server openssh-server ssh-import-id
The following packages will be upgraded:
openssh-client
1 upgraded, 5 newly installed, 0 to remove and 55 not upgraded.
Need to get 880 kB/1785 kB of archives.
After this operation, 6861 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 openssh-sftp-server amd64 1:9.6p1-3ubuntu13.8 [37.3 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 libwrap0 amd64 7.6.q-33 [47.9 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 openssh-server amd64 1:9.6p1-3ubuntu13.8 [509 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 ncurses-term all 6.4+20240113-1ubuntu2 [275 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 ssh-import-id all 5.11-0ubuntu2.24.04.1 [10.1 kB]
Fetched 880 kB in 4s (222 kB/s)
Preconfiguring packages ...
(Reading database ... 44033 files and directories currently installed.)
Preparing to unpack .../0-openssh-client_1%3a9.6p1-3ubuntu13.8_amd64.deb ...
Unpacking openssh-client (1:9.6p1-3ubuntu13.8) over (1:9.6p1-3ubuntu13.5) ...
Selecting previously unselected package openssh-sftp-server.
Preparing to unpack .../1-openssh-sftp-server_1%3a9.6p1-3ubuntu13.8_amd64.deb ...
Unpacking openssh-sftp-server (1:9.6p1-3ubuntu13.8) ...
Selecting previously unselected package libwrap0:amd64.
Preparing to unpack .../2-libwrap0_7.6.q-33_amd64.deb ...
Unpacking libwrap0:amd64 (7.6.q-33) ...
Selecting previously unselected package openssh-server.
Preparing to unpack .../3-openssh-server_1%3a9.6p1-3ubuntu13.8_amd64.deb ...
Unpacking openssh-server (1:9.6p1-3ubuntu13.8) ...
Selecting previously unselected package ncurses-term.
Preparing to unpack .../4-ncurses-term_6.4+20240113-1ubuntu2_all.deb ...
Unpacking ncurses-term (6.4+20240113-1ubuntu2) ...
Selecting previously unselected package ssh-import-id.
Preparing to unpack .../5-ssh-import-id_5.11-0ubuntu2.24.04.1_all.deb ...
Unpacking ssh-import-id (5.11-0ubuntu2.24.04.1) ...
Setting up openssh-client (1:9.6p1-3ubuntu13.8) ...
Setting up ssh-import-id (5.11-0ubuntu2.24.04.1) ...
Setting up libwrap0:amd64 (7.6.q-33) ...
Setting up ncurses-term (6.4+20240113-1ubuntu2) ...
Setting up openssh-sftp-server (1:9.6p1-3ubuntu13.8) ...
Setting up openssh-server (1:9.6p1-3ubuntu13.8) ...
Creating config file /etc/ssh/sshd_config with new version
Creating SSH2 RSA key; this may take some time ...
ENG
IN
12:10 PM
21-03-2025


mugesh@DESKTOP-ELKSV5N:
mugesh@DESKTOP-ELKSV5N:~$ sudo visudo
mugesh@DESKTOP-ELKSV5N:~$ sudo systemctl restart ssh.service
mugesh@DESKTOP-ELKSV5N:~$ sudo systemctl daemon-reload
mugesh@DESKTOP-ELKSV5N:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: enabled)
Active: active (running) since Fri 2025-03-21 05:57:41 UTC; 39s ago
TriggeredBy: ● ssh.socket
Docs: man:sshd(8)
man:sshd_config(5)
Main PID: 6531 (sshd)
Tasks: 1 (limit: 8240)
Memory: 1.2M ()
CGroup: /system.slice/ssh.service
└─6531 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"
Mar 21 05:57:41 DESKTOP-ELKSV5N systemd[1]: Starting ssh.service - OpenBSD Secure Shell server...
Mar 21 05:57:41 DESKTOP-ELKSV5N sshd[6531]: Server listening on :: port 22.
Mar 21 05:57:41 DESKTOP-ELKSV5N systemd[1]: Started ssh.service - OpenBSD Secure Shell server.
mugesh@DESKTOP-ELKSV5N:~$ ls
docker-compose.yml guvidevopsday1 pod.yml
mugesh@DESKTOP-ELKSV5N:~$ ls /etc/systemd/system/sshd.service or ls /usr/lib/systemd/system/sshd.service
ls: cannot access '/etc/systemd/system/sshd.service': No such file or directory
ls: cannot access 'or': No such file or directory
ls: cannot access 'ls': No such file or directory
ls: cannot access '/usr/lib/systemd/system/sshd.service': No such file or directory
mugesh@DESKTOP-ELKSV5N:~$ cd ~/.kube/
mugesh@DESKTOP-ELKSV5N:~/.kube$ ls
cache config
mugesh@DESKTOP-ELKSV5N:~/.kube$ sudo nano config
[sudo] password for mugesh:
mugesh@DESKTOP-ELKSV5N:~/.kube$ sudo nano config
mugesh@DESKTOP-ELKSV5N:~/.kube$ sudo vi config
mugesh@DESKTOP-ELKSV5N:~/.kube$ kubectl get node
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 47h v1.32.0
mugesh@DESKTOP-ELKSV5N:~/.kube$ sudo vi config
mugesh@DESKTOP-ELKSV5N:~/.kube$ kubectl get node
NAME STATUS ROLES AGE VERSION
minikube Ready control-plane 2d v1.32.0
mugesh@DESKTOP-ELKSV5N:~/.kube$
ENG
IN
12:10 PM
21-03-2025

Output: