

## DevOps-Day 05:

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# Devops class guvi (DAY-5)

\*21 March 2025\*

**\*Granting Jenkins Sudo Privileges\*** – The jenkins ALL=(ALL) NOPASSWD: ALL entry in the sudoers file allows the Jenkins user to run any command without a password prompt.

**\*Restarting SSH Services\*** – Commands like `sudo systemctl restart ssh.service` and `sudo systemctl restart sshd.service` restart the SSH service, ensuring remote login functionality.

**\*Installing OpenSSH Server\*** – The commands `sudo apt update` and `sudo apt install openssh-server` update package lists and install the OpenSSH server for secure remote access.

**\*Checking SSH Service Status\*** – `sudo systemctl status ssh` checks if the SSH service is running and displays its current status.

**\*Systemd Service File Lookup\*** – `ls /etc/systemd/system/sshd.service` or `ls /usr/lib/systemd/system/sshd.service` helps locate the SSH daemon's systemd service file.

**\*Reloading Systemd Daemon\*** – `sudo systemctl daemon-reload` ensures that systemd picks up changes in service configurations without requiring a reboot.

**\*Encoding Minikube Certificate\*** – `cat /home/david/.minikube/ca.crt | base64 -w 0; echo` encodes the Minikube CA certificate in base64 format, likely for authentication.

\*Changing Docker Socket Permissions\* – `sudo chmod 666 /var/run/docker.sock` grants read and write access to all users for Docker's Unix socket, allowing non-root users to interact with Docker.

\*Deploying Kubernetes Resources\* – `sh 'kubectl apply -f deployment.yml --validate=false'` applies a Kubernetes deployment file, ignoring validation errors.

\*Accessing Minikube Service\* – `minikube service my-service --url | xargs curl` retrieves the Minikube service URL and sends an HTTP request to test its accessibility.

## Commands:

```
jenkins ALL=(ALL) NOPASSWD: ALL
```

```
sudo systemctl restart ssh.service
```

```
sudo systemctl restart sshd.service
```

```
sudo apt update
```

```
sudo apt install openssh-server
```

```
sudo systemctl restart ssh
```

```
sudo systemctl status ssh
```

```
ls /etc/systemd/system/sshd.service or ls /usr/lib/systemd/system/sshd.service
```

```
sudo systemctl daemon-reload
```

```
sudo systemctl status ssh
```

```
sudo systemctl restart ssh.service
```

```
cat /home/david/.minikube/ca.crt | base64 -w 0; echo
```

```
sudo chmod 666 /var/run/docker.sock
```

```
[https://192.168.39.226:8443](https://192.168.39.226:8443/)
```

```
sh 'kubectl apply -f deployment.yml --validate=false'
```

```
minikube service my-service --url | xargs curl
```

## Pipeline codes:

```
pipeline {  
  agent any
```

```
  environment {  
    DOCKER_CREDENTIALS = credentials('docker-hub-cred') // Docker Hub  
    Credentials ID  
  }
```

```
  stages {  
    stage('SCM') {  
      steps {  
        git branch: 'main', url: '<https://github.com/MugeshS-04/guvidevopsday1.git>'  
      }  
    }  
  }
```

```
  stage('Build') {  
    steps {  
      sh "mvn clean"  
      sh "mvn install"  
    }  
  }
```

```
  stage('Build Docker Image') {  
    steps {  
      script {  
        sh 'docker build -t mugeshs04/guvidevopsday1 .'      }  
    }  
  }
```

```

    }

    stage('Push to Docker Hub') {
        steps {
            script {
                docker.withRegistry('<https://index.docker.io/v1/>', 'docker-hub-cred') {
                    sh 'docker push mugeshs04/guvidevopsday1'
                }
            }
        }
    }
}

}

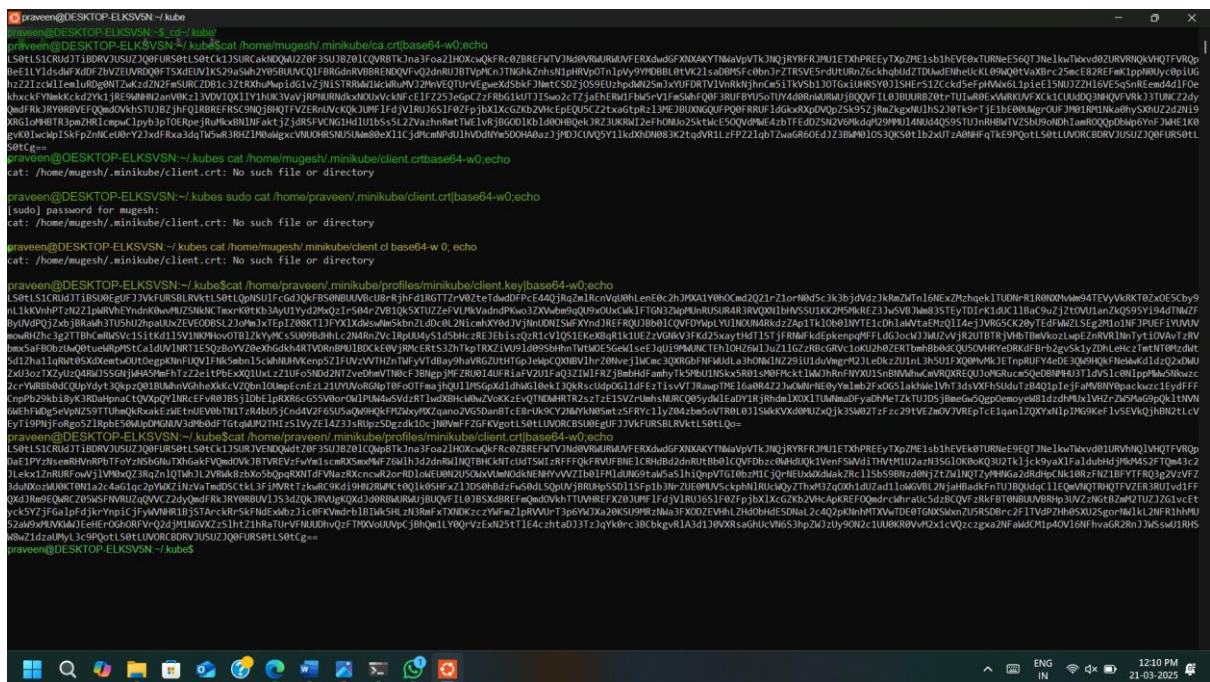
pipeline {
    agent any

    stages {
        stage('SCM') {
            steps {
                git branch: 'main', url: '<https://github.com/PraneshC2005/DevOps_simple-web-app.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 praneshc/webapplication ."  
        }  
    }  
}  
  
stage('docker push hub') {
```

```
sh 'docker push praneshc/webapplication'
```

$$\left. \begin{array}{l} \} \\ \} \\ \} \\ \} \\ \} \end{array} \right\}$$


```

praveen@DESKTOP-ELKSV5N:~$minikube start
minikube v1.35.0 on Ubuntu 24.04 (amd64)
Using the docker driver based on existing profile
Starting "minikube" primary control-plane node in "minikube" cluster
Pulling base image v0.0.46 ...
Restarting existing docker container for "minikube" ...
Preparing Kubernetes v1.32.0 on Docker 27.4.1 ...
Verifying Kubernetes components...
  ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
Enabled addons: default-storageclass, storage-provisioner
Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
praveen@DESKTOP-ELKSV5N:~$kubectl run my-pod---image=nginx--port=80
pod/my-pod created
praveen@DESKTOP-ELKSV5N:~$kubectl get pod
NAME      READY   STATUS             RESTARTS   AGE
my-pod    0/1     ContainerCreating   0           9s
praveen@DESKTOP-ELKSV5N:~$ kubectl delete all -all
error: unknown shorthand flag: 'a' in -all
See 'kubectl delete --help' for usage.
praveen@DESKTOP-ELKSV5N:~$ kubectl delete all --all
pod "my-pod" deleted
service "kubernetes" deleted
praveen@DESKTOP-ELKSV5N:~$kubectl run my-pod---image=nginx--port=7070
pod/my-pod created
praveen@DESKTOP-ELKSV5N:~$kubectl get pod
NAME      READY   STATUS    RESTARTS   AGE
my-pod    1/1     Running   0           56s
praveen@DESKTOP-ELKSV5N:~$

```

```

praveen@DESKTOP-ELKSV5N: + ~
ConfigMapOptional: <nil>
DownwardAPI: true
QoS Class: BestEffort
Node-Selectors: <none>
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
              node.kubernetes.io/unreachable:NoExecute op=Exists for 300s

Events:
  Type     Reason      Age      From          Message
  ----     -
Normal    Scheduled   8m       default-scheduler Successfully assigned default/my-pod to minikube
Warning   Failed      7m50s    kubelet       Failed to pull image "nginx": Error response from daemon:
: Head "https://registry-1.docker.io/v2/library/nginx/manifests/latest": Get "https://auth.docker.io/token?scope=repository%3Alibrary%2Fnginx%3Apull&service=registry.docker.io": dial tcp: lookup auth.docker.io on 192.168.194.192:53: server
misbehaving
Warning   Failed      7m50s    kubelet       Error: ErrImagePull
Normal    BackOff     7m49s    kubelet       Back-off pulling image "nginx"
Warning   Failed      7m49s    kubelet       Error: ImagePullBackOff
Normal    Pulling     7m34s (x2 over 7m59s) kubelet       Pulling image "nginx"
Normal    Pulled      7m13s    kubelet       Successfully pulled image "nginx" in 16.224s (16.224s in
cluding waiting). Image size: 192004242 bytes.
Normal    Created     7m13s    kubelet       Created container: my-pod
Normal    Started     7m13s    kubelet       Started container my-pod
praveen@DESKTOP-ELKSV5N:~$docker-compose.yml_snap
docker-compose.yml: command not found
praveen@DESKTOP-ELKSV5N:~$ Ls
docker-compose.vml  quidevopsdav1
praveen@DESKTOP-ELKSV5N:~$kubectl get pod-o wide
NAME      READY   STATUS    RESTARTS   AGE   IP           NODE       NOMINATED NODE   READINESS GATES
my-pod    1/1     Running   0           9m8s  10.244.0.7   minikube   <none>           <none>
praveen@DESKTOP-ELKSV5N:~$

```

```
praveen@DESKTOP-ELKSV5N: x + v
praveen@DESKTOP-ELKSV5N:~$ ls
docker-compose.yml quvidevopsday1
praveen@DESKTOP-ELKSV5N:~$ kubectl get pod-o wide
NAME READY STATUS RESTARTS AGE IP NODE NOMINATED NODE READINESS GATES
my-pod 1/1 Running 0 9m8s 10.244.0.7 minikube <none> <none>
praveen@DESKTOP-ELKSV5N:~$ kubectl logs my-pod
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Sourcing /docker-entrypoint.d/15-local-resolvers.envsh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2025/03/20 04:43:28 [notice] 1#1: using the "epoll" event method
2025/03/20 04:43:28 [notice] 1#1: nginx/1.27.4
2025/03/20 04:43:28 [notice] 1#1: built by gcc 12.2.0 (Debian 12.2.0-14)
2025/03/20 04:43:28 [notice] 1#1: OS: Linux 5.15.167.4-microsoft-standard-WSL2
2025/03/20 04:43:28 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2025/03/20 04:43:28 [notice] 1#1: start worker processes
2025/03/20 04:43:28 [notice] 1#1: start worker process 29
2025/03/20 04:43:28 [notice] 1#1: start worker process 30
2025/03/20 04:43:28 [notice] 1#1: start worker process 31
2025/03/20 04:43:28 [notice] 1#1: start worker process 32
2025/03/20 04:43:28 [notice] 1#1: start worker process 33
2025/03/20 04:43:28 [notice] 1#1: start worker process 34
2025/03/20 04:43:28 [notice] 1#1: start worker process 35
2025/03/20 04:43:28 [notice] 1#1: start worker process 36
praveen@DESKTOP-ELKSV5N:~$
```

```
praveen@DESKTOP-ELKSV5N: ~
librap0 ncurses-term openssl-server openssl-sftp-server ssh-import-id
The following packages will be upgraded:
  openssl-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 openssl-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 openssl-server amd64 1:9.6p1-3ubuntu13.8 [589 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-openssl-client_1%3a9.6p1-3ubuntu13.8_amd64.deb ...
Unpacking openssl-client (1:9.6p1-3ubuntu13.8) over (1:9.6p1-3ubuntu13.5) ...
Selecting previously unselected package openssl-sftp-server.
Preparing to unpack .../1-openssl-sftp-server_1%3a9.6p1-3ubuntu13.8_amd64.deb ...
Unpacking openssl-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 openssl-server.
Preparing to unpack .../3-openssl-server_1%3a9.6p1-3ubuntu13.8_amd64.deb ...
Unpacking openssl-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 openssl-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 openssl-sftp-server (1:9.6p1-3ubuntu13.8) ...
Setting up openssl-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 ...
```