

DevOps Lab Manual

Java

- * Install tomcat & configure it.

sudo apt-get update

sudo apt-get install tomcat9 tomcat9-admin

Configure

- Server.xml :

Sudo nano /etc/tomcat9/server.xml

add address "127.0.0.1" and change port number
8087

- tomcat-users.xml :

Sudo nano /etc/tomcat9/tomcat-users.xml

username : "jenkins" password : Tomcat@123
roles "manager-script, manager-gui"

Sudo systemctl restart tomcat

Sudo systemctl status tomcat

- * Jenkins Configuration

Manage Jenkins → Tools → Maven → mymaven : 3.9.9

Plugins → docker, kubernetes, pipeline
add → kubernetes .hpi file

Credentials : tomcat 9 : jenkins , Tomcat@123
docker : prevasishta98 , cloud@123
kubernetes : ssh to kubernetes master
find Kubeconfig file
copy paste here.

* Bare metal deployment :

Build Step

- Invoke top-level maven
Goal : package

Post build step

- deploy war/ear container
war/ear files : */*.war
context path : java
- add containers → Tomcat 9. • Remote
Tomcat credentials
Tomcat url : http://127.0.0.1:8087/

SAVE & BUILD

Check on browser

✳️ DOCKER deployment

- Same until package in build step.
- Docker build & publish
repename : prevasishta98 / javaimage
tag : latest

add Docker credentials

- Execute Shell

check expose
↑ in dockerfile

Sudo docker run -it -d -p 8089:8080
prevasishta98/java : latest

Browser : <http://127.0.0.1:8089/warfile.name>



Configuration - workspace

- java/target - .warfile
name.

✳️ Kubernetes deployment

→ Same until package in build step.

- Deploy to Kubernetes

add kubernetes credentials

manifest files : deployment.yaml service.yaml



↳ inside another path in repo : path/to/deployment.yaml
path/to/service.yaml

Browser :

ssh to kubernetes master

kubectl get svc

gives name & port of deployed container



Go to Browser <http://kube-master-ip:port/>



Node.js

* Bare metal deployment :

→ Git : repo url

→ Build-step

- execute shell :

sudo apt-get update -y
sudo apt-get install nodejs -y
sudo npm install -g pm2

gives yes

cd to package.json path x npm install

2nd time → sudo pm2 stop Server.mjs

onwards sudo pm2 start Server.mjs

.mjs or .js
file

DOCKER & KUBERNETES Same as above.

JAVA - maven - pom.xml

nodejs - package.json

python - requirement.txt



PYTHON

* Bare metal deployment

→ Build step

- Execute shell :

`Sudo apt update -y`

`Sudo apt install python3 python3-pip -y`

`Pip3 install -r requirements.txt`

`python3 run filename.py` → check repo for
fileName

Browser : `http://127.0.0.1:port/`

→ check .py for port

after build link given at the end.

DOCKER & KUBERNETES Same as above.

If docker file is not in home location add the
path (no file name) - additional settings
- build context.

file name - name section.

* Bare Metal Deployment

→ Build step :

Execute shell : copy entire shell script

Sudo apt-get update -y

Sudo apt-get install apache2 libapache2-mod-php -y

Sudo systemctl status apache2.

git clone <repo-link>

Sudo mkdir /var/www/html/staticPHP

Sudo cp -rf mompopcafe/* /var/www/html/staticPHP
↑ Contents of repo cloned

Sudo nano /etc/apache2/sites-available/000-default.conf

DOCUMENT ROOT /var/www/html/staticPHP

Sudo systemctl restart apache2

BROWSER : <http://127.0.0.1:8000/staticPHP>

↑ apache2 port

DOCKER & KUBERNETES Same as above.

To run sudo commands without pwd

Sudo nano /etc/sudoers

jenkins ALL=(ALL) NOPASSWD:ALL