Jenkins/Lab2

Lab2:

1)configure jenkins image to run docker commands on your hos docker daemon.

Dockerfile —>

```
jenkins_docker > ...
  1   FROM jenkins/jenkins:lts
  2   USER root
  3   RUN  apt-get update -y
  4   RUN  apt-get install -y \
  5       ca-certificates \
  6       curl \
  7       gnupg \
  8       lsb-release
  9   RUN  mkdir -p /etc/apt/keyrings
 10   RUN  curl -fsSL https://download.docker.com/linux/debian/gpg |  gpg --dearmor -o /etc/apt/keyrings/docker.gpg
 11   RUN echo \
 12     "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/debian \
 13     $(lsb_release -cs) stable" |  tee /etc/apt/sources.list.d/docker.list > /dev/null
 14   RUN  apt-get update  -y &&  apt-get install -y docker-ce docker-ce-cli
 15   RUN usermod -aG docker jenkins
 16
```

```
## Command to run the docker container
docker run -d -p 8087:8080 -v jenkins_home:/var/jenkins_home -v /var/run/docker.sock:/var/run/docker.sock  jenkins_docker
```

2)create CI/CD for this repo https://github.com/mahmoud254/jenkins_nodejs_example.git.

```groovy
🔒 Jenkinsfile
 1    #!/usr/bin/env groovy
 2
 3    def gv
 4    pipeline {
 5        agent any
 6        stages {
 7            stage('start') {
 8                steps {
 9                    script {
10                        gv = load 'script.groovy'
11                    }
12                }
13            }
14            stage('BuildImage') {
15                steps {
16                    script {
17                        gv.BuildImage()
18                    }
19                }
20            }
21            stage('Deploy') {
22                steps {
23                    script {
24                        gv.Deploy()
25                    }
26                }
27            }
28        }
29    }
```

```groovy
🔱 script.groovy
 1    #!/usr/bin/env groovy
 2
 3    def BuildImage() {
 4        withCredentials([[usernamePassword(credentialsId :'DockerHub',usernameVariable :'USER',passwordVariable :'PASSWORD')]]){
 5            sh 'docker build -t amagdi888/my-repo:NodeJS -f dockerfile .'
 6            sh 'echo $PASSWORD | docker login -u $USER --password-stdin'
 7            sh 'docker push amagdi888/my-repo:NodeJS'
 8        }
 9
10    }
11
12
13    def Deploy() {
14        sh 'docker run -p 3000:3000 -d amagdi888/my-repo:NodeJS'
15    }
16
17    return this
```

```
ahmed@Magdi ~/D/N/jenkins_nodejs_example (master)> docker ps | grep Node
96c944a5a47d   amagdi888/my-repo:NodeJS   "docker-entrypoint.s…"   2 minutes ago   Up 2 minutes        0.0.0.0:3000->3000/tcp, :::3000->3000/tcp
ahmed@Magdi ~/D/N/jenkins_nodejs_example (master)> ▯
```

3) **create docker file to build image for jenkins slave.**

```
1
2    FROM ubuntu:latest
3    USER root
4    RUN  apt-get update -y && apt-get install -y openjdk-11-jdk openssh-server
5    RUN useradd -m -s /bin/bash jenkins
6    RUN mkdir -p /home/jenkins/.ssh
7    COPY iti.pub /home/jenkins/.ssh/authorized_keys
8    RUN chown -R jenkins:jenkins /home/jenkins/.ssh
9    RUN chmod 700 /home/jenkins/.ssh
10   RUN chmod 644 /home/jenkins/.ssh/authorized_keys
11   USER jenkins
12   RUN mkdir /home/jenkins/jenkins_home
13   WORKDIR /home/jenkins/jenkins_home
14   EXPOSE 22
15
16   CMD [ "bash" ]
```

```
#generate key pairs
ssh-keygen
docker build -t jenkins_slave -f jenkins_slave_dockerfile .
docker run -itd jenkins_slave
docker exec -it -u 0 ${containerId} bash
service ssh start
```

Remote root directory ?

/home/jenkins/jenkins_home

Labels ?

slave

Usage ?

Only build jobs with label expressions matching this node

Launch method ?

Launch agents via SSH

Host ?

172.17.0.2

Credentials ?

jenkins

+ Add

Host Key Verification Strategy ?

Non verifying Verification Strategy   ?

Advanced...

Manage nodes and clouds

<div align="right">Refresh status</div>

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
🖥	Built-In Node	Linux (amd64)	In sync	18.82 GB	16.11 GB	18.82 GB	0ms ⚙
🖥	slave	Linux (amd64)	In sync	18.82 GB	16.11 GB	18.82 GB	42ms ⚙
	Data obtained	5 min 19 sec	5 min 19 sec	5 min 19 sec	5 min 19 sec	5 min 19 sec	5 min 19 sec

4) integrate slack with jenkins.

Slack

Workspace ?

ahmedmagdiworkspace

Credential ?

slack ⌄

＋ Add

Default channel / member id ?

devops

☐ Custom slack app bot user ?

Advanced...

Test Connection

Save   Apply

REST API

5) send slack message when stage in your pipeline is successful.

from https://www.jenkins.io/doc/book/pipeline/syntax/#post-example

https://www.jenkins.io/doc/pipeline/steps/slack/

https://eavnitech.com/blog/send-notification-to-slack-from-the-Jenkins-CI-job-and-jenkinsfile/

```groovy
#!/usr/bin/env groovy

def gv
pipeline {
    agent any
    stages {
        stage('start') {
            steps {
                script {
                    gv = load 'script.groovy'
                }
            }
        }
        stage('BuildImage') {
            steps {
                script {
                    gv.BuildImage()
                }
            }
        }
        stage('Deploy') {
            steps {
                script {
                    gv.Deploy()
                }
            }
        }
    }
    post {
        success {
            slackSend (message:"Build deployed successfully - ${env.JOB_NAME} ${env.BUILD_NUMBER} (<${env.BUILD_URL}|Open>)")
        }
        failure {
            slackSend (message:"Build failed  - ${env.JOB_NAME} ${env.BUILD_NUMBER} (<${env.BUILD_URL}|Open>)")
        }
    }
}
```

Today ˅

ahmed magdi 7:39 PM
joined #random.

jenkins APP 8:25 PM
Slack/Jenkins plugin: you're all set on http://localhost:8080/

Build deployed successfully - NodeJs 11 (Open)

6) install audit logs plugin and test it.

Log session start time 2022-07-23T18:34:56.246Z

Time	Thread	Level	Logger	Message
2022-07-23T18:35:46.973Z	Handling POST /job/lab-1/doDelete from 172.17.0.1 : Jetty (winstone)-27	OFF	AuditLogger	Audit [updateItem itemName="lab-1" itemUri="job/lab-1/" timestamp="2022-07-23T18:35:46.968Z" userId="ahmed"]
MDC: {requestUri=/job/lab-1/doDelete, userId=ahmed, requestId=363582e4-811e-4456-940f-043dc7b6068f, requestMethod=POST}				
2022-07-23T18:35:47.134Z	Handling POST /job/lab-1/doDelete from 172.17.0.1 : Jetty (winstone)-27	OFF	AuditLogger	Audit [deleteItem itemName="lab-1" itemUri="job/lab-1/" timestamp="2022-07-23T18:35:47.134Z" userId="ahmed"]
MDC: {requestUri=/job/lab-1/doDelete, userId=ahmed, requestId=363582e4-811e-4456-940f-043dc7b6068f, requestMethod=POST}				