

Q1 -CICD DOCUMENT

Repository creation:

Dashboard > All > New Item

New Item

Enter an item name

node-pipeline

Select an item type

 Freestyle project
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

 Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

 Multi-configuration project

```
kubemaster@kubemaster-vm:~$ cd /var/lib/jenkins/workspace/node-pipeline
kubemaster@kubemaster-vm:/var/lib/jenkins/workspace/node-pipeline$ ls
app.js  dockerfile  package.json  README.md
kubemaster@kubemaster-vm:/var/lib/jenkins/workspace/node-pipeline$
```

Building docker image

```
kubemaster@kubemaster-vm:/var/lib/jenkins/workspace/node-pipeline$ ls
app.js  dockerfile  package.json  README.md
kubemaster@kubemaster-vm:/var/lib/jenkins/workspace/node-pipeline$ docker build -t karthik449/myapp-z .
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Post "http://%2Fvar%2Frun%2Fdocker.sock/v1.45/build?bu
ldargs=%7B%7D&cachefrom=%5B%5D&cgroupparent=%26cpuquota=0&cpuusetcpus=%26cpusetmems=%26pushshares=0&dockerfile=dockerfile&labels=%7B%7D&memory=0&memswap=
0&networkmode=default&rm=1&shmsize=0&t=karthik449%2Fmyapp-z&target=%26ulimits=%5B%5D&version=1": dial unix /var/run/docker.sock: connect: permission denied
kubemaster@kubemaster-vm:/var/lib/jenkins/workspace/node-pipeline$ sudo docker build -t karthik449/myapp-z .
[sudo] password for kubemaster:
DEPRECATED: The legacy builder is deprecated and will be removed in a future release.
Install the buildx component to build images with BuildKit:
https://docs.docker.com/go/buildx/

Sending build context to Docker daemon  78.85kB
Step 1/7 : FROM node:current-alpine
current-alpine: Pulling from library/node
fe07684b16b8: Pull complete
d5a7e512615e: Pull complete
3f786de23eaf: Pull complete
193e533cd2a1: Pull complete
Digest: sha256:91aa1bb6b5f57ec5109155332f4af2aa5d73ff7b4512c8e5dfce5dc88dbbae0e
Status: Downloaded newer image for node:current-alpine
--> 70c307a00bc8
Step 2/7 : WORKDIR /app
```

Creating deployments and service :

Deployment.yaml file

```
GNU nano 4.8 deployment.yaml Modifi
apiVersion: apps/v1
kind: Deployment
metadata:
  name: myapp
spec:
  selector:
    matchLabels:
      app: myapp
  template:
    metadata:
      labels:
        app: myapp
    spec:
      containers:
      - name: myapp
        image: nginx
        resources:
          limits:
            memory: "128Mi"
            cpu: "500m"
        ports:
        - containerPort: 9090
```

Service.yaml

```
GNU nano 4.8 service.yaml
apiVersion: v1
kind: Service
metadata:
  name: myapp
spec:
  selector:
    app: myapp
  ports:
  - port: 80
    targetPort: 3000
```

Jenkins pipeline

Build and Test stage:

Script ?

```
1 pipeline {
2   agent any
3
4   stages {
5     stage('Git cloning') {
6       steps {
7         git branch: 'main', url: 'https://github.com/devopsexamur/nodejsapp.git
8       }
9     }
10    stage('Build and test'){
11      steps {
12        withCredentials([usernamePassword(credentialsId: 'docker-cred', passwordVaria
13          sh'''
14            docker build -t karthik449/myapp-z .
15          ''')
```

Script ?

```
16    }
17  }
18 }
19 stage('Deployment'){
20   steps{
21     withCredentials([file(credentialsId: 'config-cred', variable: 'KUBECONFIG')]) {
22
23       sh 'kubectl apply -f deployment.yaml'
24       sh 'kubectl apply -f service.yaml'
25     }
26   }
27 }
28 }
29 }
30 }
```

Dashboard > node-pipeline > #15

Status

Changes

Console Output

Edit Build Information

Delete build #15

Timings

Git Build Data

Pipeline Overview

Restart from Stage

Replay

Pipeline Steps

Console Output

Started by user [admin](#)

[Pipeline] Start of Pipeline

[Pipeline] node

Running on [Jenkins](#) in /var/lib/jenkins/workspace/node-pipeline

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Git cloning)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/node-pipeline/.git # timeout=10

Fetching changes from the remote Git repository

> git config remote.origin.url <https://github.com/devopsexamur/nodejsapp.git> # timeout=10

Fetching upstream changes from <https://github.com/devopsexamur/nodejsapp.git>

> git --version # timeout=10

> git --version # 'git version 2.25.1'

Dashboard >

+ New Item

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

New View

All +

Add description

S	W	Name	Last Success	Last Failure	Last Duration
		node-pipeline	2 min 17 sec #15	3 min 42 sec #14	2.5 sec

Build Queue

No builds in the queue.

Build Executor Status

0/2

Icon: S M L

Verifying service and deployment

```
kubectl get deployment,svc
```

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/myapp	1/1	1	1	66s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	4d18h
service/myapp	ClusterIP	10.100.222.100	<none>	80/TCP	18s
service/vilaspod	ClusterIP	10.105.152.65	<none>	80/TCP	2d20h