

DEVOPS

DAY 6 Task

Java Application Minikube Deployment

Pipeline script

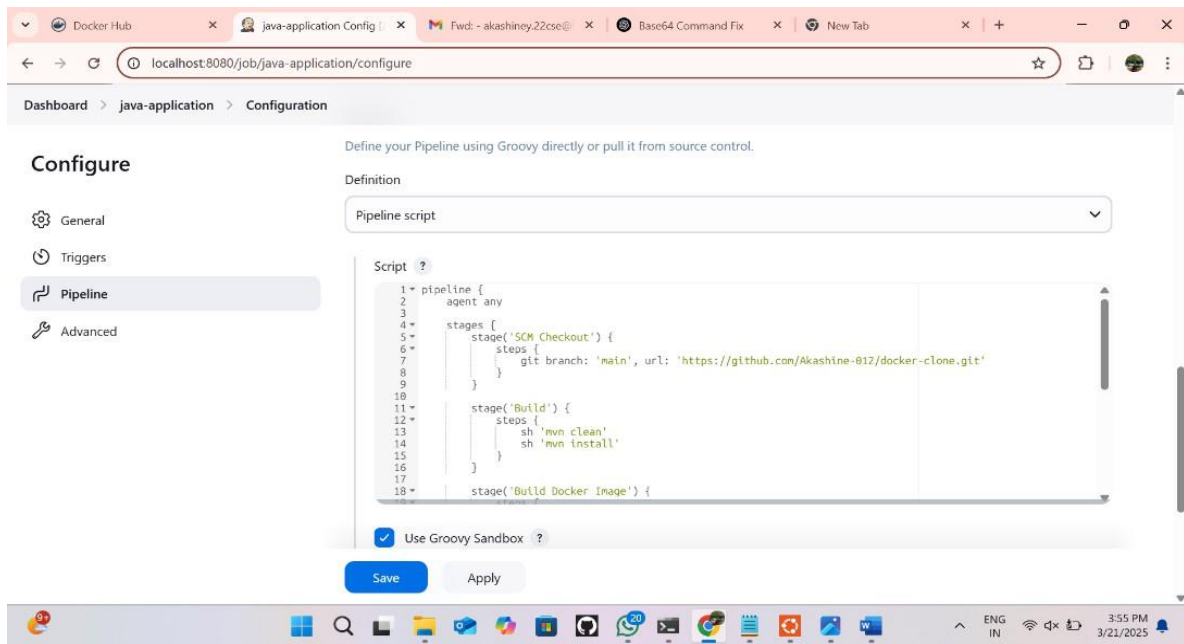
```
pipeline { agent any
  stages {
    stage('scm') { steps {
      git branch: 'git branch: 'main'', url: 'https://github.com/Akashine-012/docker-clone.git'
    }
  }
  stage('builb-clean') { steps {
    sh "mvn clean"
  }
  }
  stage('build-validate') { steps {
    sh "mvn validate"
  }
  }
  stage('build-com') { steps {
    sh "mvn compile"
  }
  }
  stage('build-test') { steps {
    sh "mvn test"
  }
  }
  stage('build-install') { steps {
    sh "mvn package"
  }
  }
```

```
stage('build to images') {
  steps { script{
    sh 'docker build -t akashine/javaapp .'
  }
}

stage('push to hub') { steps {
  script{
    withDockerRegistry(credentialsId: 'docker_cred', url: 'https://index.docker.io/v1/') { sh 'docker push '
    akashine/javaapp
  }
}

stage('Deploy App') { steps {
  withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube', credentialsId:
  'minikube_cred', namespace: '', restrictKubeConfigAccess: false, serverUrl:
  'https://192.168.49.2:8443') {
    sh 'kubectl apply -f deployment.yml --validate=false'
  }
}

stage('Test') { steps {
  withKubeConfig(caCertificate: '', clusterName: 'minikube', contextName: 'minikube', credentialsId:
  'minikube_cred', namespace: '', restrictKubeConfigAccess: false, serverUrl:
  'https://192.168.49.2:8443') {
    sh 'minikube service my-service --url | xargs curl'
  }
}
}
```



Deployment.yml commands

1. Sudo nano deployment.yml
2. Kubectl apply -f deployment.yml
3. Kubectl get pod
4. minikube service my-service
5. kubectl port-forward svc/my-service 9000:9000

Deployment file

apiVersion: apps/v1

kind: Deployment

metadata:

name: my-deploy

labels:

apptype: web-backend # Ensure this matches Service selector

spec:

replicas: 4

selector:

matchLabels:

apptype: web-backend # Ensure this matches Service selector

strategy:

type: RollingUpdate

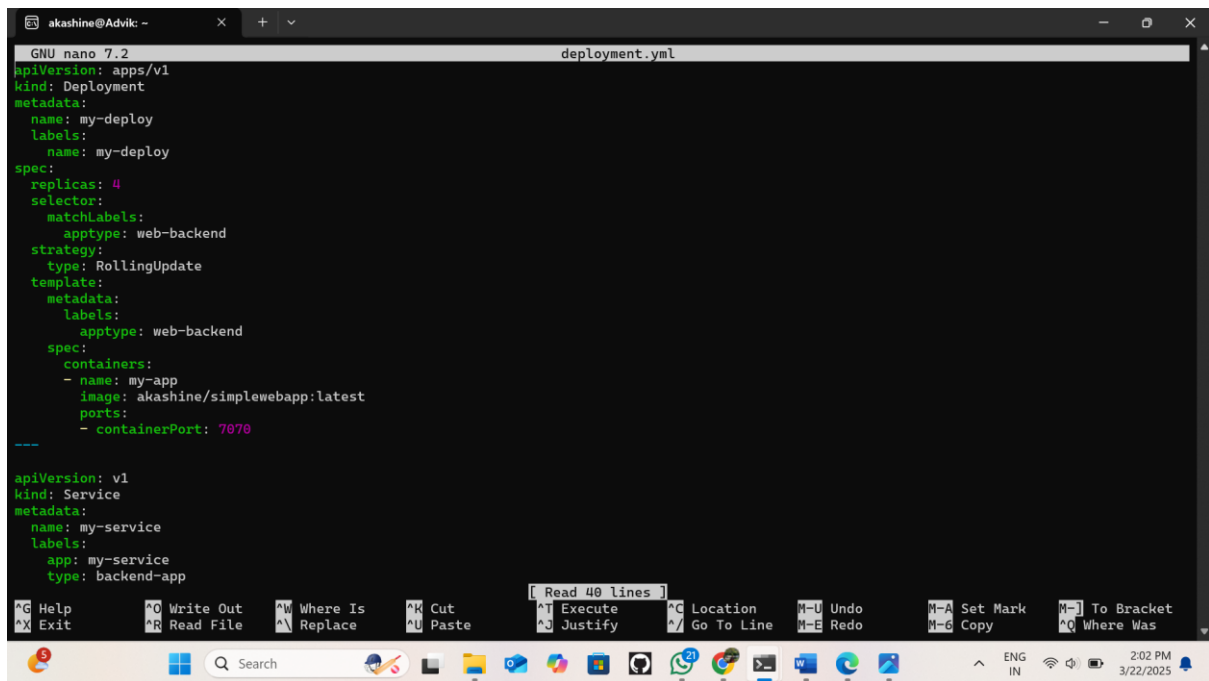
template:

metadata:

labels:

apptype: web-backend # Ensure this matches Service selector

```
spec:
  containers:
  - name: my-app
    image: ashilin20/app:latest
    ports:
    - containerPort: 5050
---
apiVersion: v1
kind: Service
metadata:
  name: my-service
  labels:
    apptype: web-backend # Make labels consistent
spec:
  type: NodePort
  ports:
  - targetPort: 8080
    port: 5050
    nodePort: 30001
```



The screenshot shows a terminal window with the nano 7.2 editor open, editing a file named `deployment.yml`. The manifest defines a Deployment and a Service. The Deployment has 4 replicas, uses a RollingUpdate strategy, and has a template with a container named 'my-app' using the image 'akashine/simplewebapp:latest' and port 7070. The Service is of type 'NodePort' and has a port 5050 mapped to targetPort 8080 and nodePort 30001. The terminal window title is 'akashine@Advik: -'. The bottom of the screen shows a Windows taskbar with various icons and a system tray indicating the time is 2:02 PM on 3/22/2025.

```
GNU nano 7.2 deployment.yml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: my-deploy
  labels:
    name: my-deploy
spec:
  replicas: 4
  selector:
    matchLabels:
      apptype: web-backend
  strategy:
    type: RollingUpdate
  template:
    metadata:
      labels:
        apptype: web-backend
    spec:
      containers:
      - name: my-app
        image: akashine/simplewebapp:latest
        ports:
        - containerPort: 7070
---
apiVersion: v1
kind: Service
metadata:
  name: my-service
  labels:
    app: my-service
  type: backend-app
```

```
akashine@Advik: ~  
my-deploy-6f6bc8b66d-svwhx 0/1 Terminating 0 7m6s  
akashine@Advik:~$ kubectl get pod  
NAME READY STATUS RESTARTS AGE  
my-deploy-6f6bc8b66d-2qgtw 0/1 ContainerCreating 0 64s  
my-deploy-6f6bc8b66d-b94r6 0/1 ContainerCreating 0 64s  
my-deploy-6f6bc8b66d-bxd82 0/1 ContainerCreating 0 64s  
my-deploy-6f6bc8b66d-cp9mw 0/1 ContainerCreating 0 106s  
my-deploy-6f6bc8b66d-svwhx 0/1 Terminating 0 7m35s  
akashine@Advik:~$ kubectl get pod  
NAME READY STATUS RESTARTS AGE  
my-deploy-6f6bc8b66d-2qgtw 1/1 Running 0 99s  
my-deploy-6f6bc8b66d-b94r6 1/1 Running 0 99s  
my-deploy-6f6bc8b66d-bxd82 1/1 Running 0 99s  
my-deploy-6f6bc8b66d-cp9mw 1/1 Running 0 2m21s  
akashine@Advik:~$ minikube service my-service  
-----  
| NAMESPACE | NAME | TARGET PORT | URL |  
|-----|-----|-----|-----|  
| default | my-service | 7070 | http://192.168.49.2:30001 |  
|-----|-----|-----|-----|  
Starting tunnel for service my-service.  
-----  
| NAMESPACE | NAME | TARGET PORT | URL |  
|-----|-----|-----|-----|  
| default | my-service | 7070 | http://127.0.0.1:45585 |  
|-----|-----|-----|-----|  
Opening service default/my-service in default browser...  
http://127.0.0.1:45585  
! Because you are using a Docker driver on linux, the terminal needs to be open to run it.  
^C Stopping tunnel for service my-service.  
akashine@Advik:~$ kubectl port-forward svc/my-service 9000:7070  
Forwarding from 127.0.0.1:9000 -> 8080  
Forwarding from [::1]:9000 -> 8080  
Handling connection for 9000  
Handling connection for 9000
```

Minikube SSH Aut...

Docker Hub

localhost:9000/m...

Dashboard [jenkins]

Download file | il...

(no subject) - akas...

localhost:8080

Jenkins

log out

Dashboard

+ New Item

Build History

Project Relationship

Check File Fingerprint

Manage Jenkins

My Views

Build Queue

No builds in the queue.

Build Executor Status

0/2

All

+

S	W	Name	Last Success	Last Failure	Last Duration
✓	☁	java-application	22 hr #13	22 hr #12	39 sec ▶
✓	☀	maven	2 days 22 hr #1	N/A	21 sec ▶
✓	☁	simpletomcatapplication	2 days 20 hr #7	2 days 20 hr #6	41 sec ▶

Icon: S M L

akashine/javawebapp | Docker | java-application [jenkins] | Fwd: - akashiney.22cse@kongu | Base64 Command Fix

localhost:8080/job/java-application/

Stage View

Changes

- Build Now
- Configure
- Delete Pipeline
- Full Stage View
- Stages
- Rename
- Pipeline Syntax

Average stage times:
(full run time: ~39s)

	SCM Checkout	Build	Build Docker Image	Push to Docker Hub
#13 15:46 No Changes	2s	7s	933ms	27s
#12 15:31 No Changes	2s	10s	850ms	22s

Permalinks

- Last build (#12), 14 min ago
- Last stable build (#11), 1 hr 8 min ago
- Last successful build (#11), 1 hr 8 min ago

Builds

Filter

Today

#13 10:16 AM

Windows taskbar: Search, ENG IN, 3:48 PM 3/21/2025

akashine/javawebapp | Docker | java-application #13 Console | Fwd: - akashiney.22cse@kongu | Base64 Command Fix

localhost:8080/job/java-application/13/console

Dashboard > java-application > #13

```
43c9f8a1dd61: Layer already exists
4e5b554b7345: Layer already exists
f844dcf94898: Layer already exists
4b7c01ed0534: Layer already exists
39cf0ac89a5a: Layer already exists
3359bc3d7a6a: Layer already exists
7d8900aa0774: Pushed
latest: digest: sha256:5576fd20bffa7acb0a0901cd636850f0417bfff56053a75d77d3879de15dfb62 size: 2409
[Pipeline] }
[Pipeline] // withDockerRegistry
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

REST API Jenkins 2.492.2

Windows taskbar: Search, ENG IN, 3:48 PM 3/21/2025

Minikube SSH x Docker Hub x localhost:9000 x java-applicati x Pipeline Synta x Download file x (no subject) - x + - x

localhost:8080/job/java-application/pipeline-syntax/ ☆ x

Dashboard > java-application > Pipeline Syntax

- Declarative Online Documentation
- Steps Reference
- Global Variables Reference
- Online Documentation
- Examples Reference
- IntelliJ IDEA GDSDL

When configuring each Pipeline step, you will see a Pipeline script statement that holds all the step parameters configuration. You may copy and paste the whole statement into your script, or pick up just the options you care about. (Most parameters are optional and can be omitted in your script, leaving them at default values.)

Steps

Sample Step

withKubeConfig: Configure Kubernetes CLI (kubectl) ▾

withKubeConfig ?

Credentials

config ▾

+ Add

Kubernetes server endpoint ?

https://192.168.39.226:8443

Cluster name ?

Windows taskbar: Search, 2:00 PM 3/22/2025

Minikube SSH Aut x Docker Hub x localhost:9000/mo x System > Global cr x Download file | IL x (no subject) - akas x + - x

localhost:8080/manage/credentials/store/system/domain/_/credential/minikube-cred/ ☆ x

Jenkins

Dashboard > Manage Jenkins > Credentials > System > Global credentials (unrestricted) > config

Update
Delete
Move

config

Usage

This credential has been recorded as used in the following places:

Note: usage tracking requires the cooperation of plugins and consequently may not track every use.

java-application #22 - #24

REST API Jenkins 2.492.2

Windows taskbar: Search, 1:55 PM 3/22/2025

