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Developer Operations

Exercise #9

24-MAR-2023

1. Step 1 involves two (2) tests; below I submit 1 pipeline and console log output per test with additional screenshots (so 2 pipelines and 2 console logs for Step 1)

**Test #1:**

Before delivery…I already have 3 replicas in staging…shown below…I changed it to 4 and updated things as described below (based on the lab notes).

**Monitoring rolling updates:**

PS C:\users\dona\_\bendev\week9\week9\_exercise\week9> kubectl get pods -w -n staging

The items in green below show the initial state before my pipeline ran and applied the rolling update…(so I had 3 replicas to start)…at the end of this I will show my pods (should have 4 now)

NAME READY STATUS RESTARTS AGE

calculator-deployment-6ff57c67c7-6ff2p 1/1 Running 0 178m

calculator-deployment-6ff57c67c7-fwvbd 1/1 Running 0 178m

calculator-deployment-6ff57c67c7-jbz6t 1/1 Running 0 178m

hazelcast-7cd56f9f94-5k497 1/1 Running 0 28h

calculator-deployment-6ff57c67c7-g9wzw 0/1 Pending 0 0s

calculator-deployment-6ff57c67c7-g9wzw 0/1 Pending 0 0s

calculator-deployment-6ff57c67c7-g9wzw 0/1 ContainerCreating 0 0s

calculator-deployment-6ff57c67c7-g9wzw 0/1 Terminating 0 0s

calculator-deployment-587c6d4d5d-7n8qd 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-7n8qd 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-7n8qd 0/1 ContainerCreating 0 0s

calculator-deployment-6ff57c67c7-g9wzw 1/1 Terminating 0 4s

calculator-deployment-587c6d4d5d-7n8qd 0/1 Running 0 4s

calculator-deployment-587c6d4d5d-7n8qd 1/1 Running 0 21s

calculator-deployment-6ff57c67c7-6ff2p 1/1 Terminating 0 179m

calculator-deployment-587c6d4d5d-69fh6 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-69fh6 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-69fh6 0/1 ContainerCreating 0 0s

calculator-deployment-6ff57c67c7-6ff2p 0/1 Terminating 0 179m

calculator-deployment-6ff57c67c7-6ff2p 0/1 Terminating 0 179m

calculator-deployment-6ff57c67c7-6ff2p 0/1 Terminating 0 179m

calculator-deployment-587c6d4d5d-69fh6 0/1 Running 0 3s

calculator-deployment-6ff57c67c7-g9wzw 0/1 Terminating 0 35s

calculator-deployment-6ff57c67c7-g9wzw 0/1 Terminating 0 35s

calculator-deployment-6ff57c67c7-g9wzw 0/1 Terminating 0 35s

calculator-deployment-587c6d4d5d-69fh6 1/1 Running 0 21s

calculator-deployment-6ff57c67c7-fwvbd 1/1 Terminating 0 179m

calculator-deployment-587c6d4d5d-2f4pn 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-2f4pn 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-2f4pn 0/1 ContainerCreating 0 0s

calculator-deployment-6ff57c67c7-fwvbd 0/1 Terminating 0 179m

calculator-deployment-6ff57c67c7-fwvbd 0/1 Terminating 0 179m

calculator-deployment-6ff57c67c7-fwvbd 0/1 Terminating 0 179m

calculator-deployment-587c6d4d5d-2f4pn 0/1 Running 0 2s

calculator-deployment-587c6d4d5d-2f4pn 1/1 Running 0 11s

calculator-deployment-6ff57c67c7-jbz6t 1/1 Terminating 0 179m

calculator-deployment-587c6d4d5d-9j9rn 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-9j9rn 0/1 Pending 0 0s

calculator-deployment-587c6d4d5d-9j9rn 0/1 ContainerCreating 0 0s

calculator-deployment-587c6d4d5d-9j9rn 0/1 Running 0 2s

calculator-deployment-6ff57c67c7-jbz6t 0/1 Terminating 0 3h

calculator-deployment-6ff57c67c7-jbz6t 0/1 Terminating 0 3h

calculator-deployment-6ff57c67c7-jbz6t 0/1 Terminating 0 3h

calculator-deployment-587c6d4d5d-9j9rn 1/1 Running 0 11s

**After the pipeline ran, we run a final check…and yes, I now have 4 replicas (I modified my calculator.yaml file based on the lab notes and the sample from the book related to: maxUnavailable, maxSurge, readinessProbe.**

PS C:\users\dona\_\bendev\week9\week9\_exercise\week9> kubectl get pods -n staging

NAME READY STATUS RESTARTS AGE

calculator-deployment-587c6d4d5d-2f4pn 1/1 Running 0 4m8s

calculator-deployment-587c6d4d5d-69fh6 1/1 Running 0 4m29s

calculator-deployment-587c6d4d5d-7n8qd 1/1 Running 0 4m50s

calculator-deployment-587c6d4d5d-9j9rn 1/1 Running 0 3m57s

hazelcast-7cd56f9f94-5k497 1/1 Running 0 28h

PS C:\users\dona\_\bendev\week9\week9\_exercise\week9>

**Jenkins Pipeline:**

podTemplate(yaml: '''

apiVersion: v1

kind: Pod

spec:

containers:

- name: gradle

image: gradle:8-jdk8

command:

- sleep

args:

- 99d

volumeMounts:

- name: shared-storage

mountPath: /mnt

- name: centos

image: centos

command:

- sleep

args:

- 99d

restartPolicy: Never

volumes:

- name: shared-storage

persistentVolumeClaim:

claimName: jenkins-pv-claim

- name: kaniko-secret

secret:

secretName: dockercred

items:

- key: .dockerconfigjson

path: config.json

''') {

node(POD\_LABEL) {

stage('k8s') {

git branch: env.BRANCH\_NAME, url: 'https://github.com/bsieraduml/week9.git'

container('centos') {

stage('rolling update calculator') {

sh '''

curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"

chmod +x ./kubectl

./kubectl apply -f calculator.yaml -n staging

./kubectl apply -f hazelcast.yaml -n staging

'''

}

}

}

} // NODE pod label

} //root

**Console Log Output:**

Pull request #3 closed

00:06:08 Connecting to [https://api.github.com](https://api.github.com/) using bsieraduml/\*\*\*\*\*\*

Obtained Jenkinsfile from 628466c5094dd2288ae8e9cb324de68ee5a7c828

[Pipeline] Start of Pipeline

[Pipeline] podTemplate

[Pipeline] {

[Pipeline] node

Created Pod: kubernetes devops-tools/week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz

Still waiting to schedule task

‘[week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz](http://localhost:32000/computer/week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz/)’ is offline

Agent [week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz](http://localhost:32000/computer/week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz) is provisioned from template week9\_exercise1\_feaEx1\_3-m8q8p-9j005

---

apiVersion: "v1"

kind: "Pod"

metadata:

annotations:

buildUrl: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/job/week9_exercise1/job/feaEx1/3/>"

runUrl: "job/week9\_exercise1/job/feaEx1/3/"

labels:

jenkins: "agent"

jenkins/label-digest: "8ff714f3394fd0a7bdde17d378eff96e1f897ada"

jenkins/label: "week9\_exercise1\_feaEx1\_3-m8q8p"

name: "week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz"

namespace: "devops-tools"

spec:

containers:

- args:

- "99d"

command:

- "sleep"

image: "gradle:8-jdk8"

name: "gradle"

volumeMounts:

- mountPath: "/mnt"

name: "shared-storage"

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- args:

- "99d"

command:

- "sleep"

image: "centos"

name: "centos"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- env:

- name: "JENKINS\_SECRET"

value: "\*\*\*\*\*\*\*\*"

- name: "JENKINS\_AGENT\_NAME"

value: "week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz"

- name: "JENKINS\_NAME"

value: "week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz"

- name: "JENKINS\_AGENT\_WORKDIR"

value: "/home/jenkins/agent"

- name: "JENKINS\_URL"

value: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/>"

image: "jenkins/inbound-agent:3107.v665000b\_51092-4"

name: "jnlp"

resources:

requests:

memory: "256Mi"

cpu: "100m"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

nodeSelector:

kubernetes.io/os: "linux"

restartPolicy: "Never"

volumes:

- name: "kaniko-secret"

secret:

items:

- key: ".dockerconfigjson"

path: "config.json"

secretName: "dockercred"

- emptyDir:

medium: ""

name: "workspace-volume"

- name: "shared-storage"

persistentVolumeClaim:

claimName: "jenkins-pv-claim"

Running on [week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz](http://localhost:32000/computer/week9-exercise1-feaex1-3-m8q8p-9j005-z6qqz/) in /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1

[Pipeline] {

[Pipeline] stage

[Pipeline] { (k8s)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

Cloning the remote Git repository

Cloning repository <https://github.com/bsieraduml/week9.git>

> git init /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1 # timeout=10

Fetching upstream changes from <https://github.com/bsieraduml/week9.git>

> git --version # timeout=10

> git --version # 'git version 2.30.2'

> git fetch --tags --force --progress -- <https://github.com/bsieraduml/week9.git> +refs/heads/\*:refs/remotes/origin/\* # timeout=10

> git config remote.origin.url <https://github.com/bsieraduml/week9.git> # timeout=10

> git config --add remote.origin.fetch +refs/heads/\*:refs/remotes/origin/\* # timeout=10

Avoid second fetch

Checking out Revision 628466c5094dd2288ae8e9cb324de68ee5a7c828 (refs/remotes/origin/feaEx1)

> git rev-parse refs/remotes/origin/feaEx1^{commit} # timeout=10

> git config core.sparsecheckout # timeout=10

> git checkout -f 628466c5094dd2288ae8e9cb324de68ee5a7c828 # timeout=10

> git branch -a -v --no-abbrev # timeout=10

> git checkout -b feaEx1 628466c5094dd2288ae8e9cb324de68ee5a7c828 # timeout=10

Commit message: "fix file"

First time build. Skipping changelog.

[Pipeline] container

[Pipeline] {

[Pipeline] stage

[Pipeline] { (rolling update calculator)

[Pipeline] sh

++ curl -L -s <https://dl.k8s.io/release/stable.txt>

+ curl -LO <https://dl.k8s.io/release/v1.26.3/bin/linux/amd64/kubectl>

% Total % Received % Xferd Average Speed Time Time Time Current

Dload Upload Total Spent Left Speed

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

100 138 100 138 0 0 346 0 --:--:-- --:--:-- --:--:-- 345

5 45.8M 5 2798k 0 0 2181k 0 0:00:21 0:00:01 0:00:20 2181k

15 45.8M 15 7183k 0 0 3154k 0 0:00:14 0:00:02 0:00:12 4411k

24 45.8M 24 11.2M 0 0 3525k 0 0:00:13 0:00:03 0:00:10 4389k

34 45.8M 34 15.6M 0 0 3737k 0 0:00:12 0:00:04 0:00:08 4403k

43 45.8M 43 19.8M 0 0 3846k 0 0:00:12 0:00:05 0:00:07 4381k

50 45.8M 50 23.3M 0 0 3810k 0 0:00:12 0:00:06 0:00:06 4228k

59 45.8M 59 27.4M 0 0 3857k 0 0:00:12 0:00:07 0:00:05 4178k

68 45.8M 68 31.4M 0 0 3895k 0 0:00:12 0:00:08 0:00:04 4137k

77 45.8M 77 35.6M 0 0 3931k 0 0:00:11 0:00:09 0:00:02 4098k

86 45.8M 86 39.5M 0 0 3936k 0 0:00:11 0:00:10 0:00:01 4032k

95 45.8M 95 43.8M 0 0 3985k 0 0:00:11 0:00:11 --:--:-- 4204k

100 45.8M 100 45.8M 0 0 3989k 0 0:00:11 0:00:11 --:--:-- 4203k

+ chmod +x ./kubectl

+ ./kubectl apply -f calculator.yaml -n staging

deployment.apps/calculator-deployment configured

service/calculator-service unchanged

+ ./kubectl apply -f hazelcast.yaml -n staging

deployment.apps/hazelcast unchanged

service/hazelcast unchanged

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // container

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // node

[Pipeline] }

[Pipeline] // podTemplate

[Pipeline] End of Pipeline

Could not update commit status, please check if your scan credentials belong to a member of the organization or a collaborator of the repository and repo:status scope is selected

GitHub has been notified of this commit’s build result

Finished: SUCCESS

**Test #2:**

**Jenkins Pipeline:**

podTemplate(yaml: '''

apiVersion: v1

kind: Pod

spec:

containers:

- name: gradle

image: gradle:8-jdk8

command:

- sleep

args:

- 99d

volumeMounts:

- name: shared-storage

mountPath: /mnt

- name: centos

image: centos

command:

- sleep

args:

- 99d

restartPolicy: Never

volumes:

- name: shared-storage

persistentVolumeClaim:

claimName: jenkins-pv-claim

- name: kaniko-secret

secret:

secretName: dockercred

items:

- key: .dockerconfigjson

path: config.json

''') {

node(POD\_LABEL) {

stage('k8s') {

git branch: env.BRANCH\_NAME, url: 'https://github.com/bsieraduml/week9.git'

container('centos') {

stage('rolling update calculator') {

sh '''

curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"

chmod +x ./kubectl

echo 'week 9 exercise 1 part 2 a - test sum and div with first image'

./kubectl delete deployment calculator-deployment -n staging

./kubectl apply -f calculator.yaml -n staging

./kubectl apply -f hazelcast.yaml -n staging

echo 'after deployment sleep 30 seconds'

sleep 30

test $(curl calculator-service.staging.svc.cluster.local:8080/sum?a=10\\&b=2) -eq 12 && echo 'sum passes' || echo 'sum fails'

test $(curl calculator-service.staging.svc.cluster.local:8080/div?a=10\\&b=2) -eq 5 && echo 'div passes' || echo 'div fails'

echo 'week 9 exercise 1 part 2 b - test sum and div with second image'

./kubectl delete deployment calculator-deployment -n staging

./kubectl apply -f calculator2.yaml -n staging

echo 'after deployment sleep 30 seconds'

sleep 30

test $(curl calculator-service.staging.svc.cluster.local:8080/sum?a=10\\&b=2) -eq 12 && echo 'sum passes' || echo 'sum fails'

test $(curl calculator-service.staging.svc.cluster.local:8080/div?a=10\\&b=2) -eq 5 && echo 'div passes' || echo 'div fails'

'''

}

}

}

} // NODE pod label

} //root

**Console Log Output:**

Push event to branch feaEx1

23:10:41 Connecting to [https://api.github.com](https://api.github.com/) using bsieraduml/\*\*\*\*\*\*

23:10:41 GitHub throttling is disabled, which is not allowed for public GitHub usage, so ThrottleOnOver will be used instead. To configure a different rate limiting strategy, go to "GitHub API usage" under "Configure System" in the Jenkins settings.

Obtained Jenkinsfile from 9de688a42b0ce2b12e4facded94f0d7a81f24414

[Pipeline] Start of Pipeline

[Pipeline] podTemplate

[Pipeline] {

[Pipeline] node

Created Pod: kubernetes devops-tools/week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm

Still waiting to schedule task

‘[week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm](http://localhost:32000/computer/week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm/)’ is offline

Agent [week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm](http://localhost:32000/computer/week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm) is provisioned from template week9\_exercise1\_feaEx1\_13-cj128-r2b4k

---

apiVersion: "v1"

kind: "Pod"

metadata:

annotations:

buildUrl: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/job/week9_exercise1/job/feaEx1/13/>"

runUrl: "job/week9\_exercise1/job/feaEx1/13/"

labels:

jenkins: "agent"

jenkins/label-digest: "9bd48a6f00843e5435d11d9e7476190b8a6d7f76"

jenkins/label: "week9\_exercise1\_feaEx1\_13-cj128"

name: "week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm"

namespace: "devops-tools"

spec:

containers:

- args:

- "99d"

command:

- "sleep"

image: "gradle:8-jdk8"

name: "gradle"

volumeMounts:

- mountPath: "/mnt"

name: "shared-storage"

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- args:

- "99d"

command:

- "sleep"

image: "centos"

name: "centos"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- env:

- name: "JENKINS\_SECRET"

value: "\*\*\*\*\*\*\*\*"

- name: "JENKINS\_AGENT\_NAME"

value: "week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm"

- name: "JENKINS\_NAME"

value: "week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm"

- name: "JENKINS\_AGENT\_WORKDIR"

value: "/home/jenkins/agent"

- name: "JENKINS\_URL"

value: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/>"

image: "jenkins/inbound-agent:3107.v665000b\_51092-4"

name: "jnlp"

resources:

requests:

memory: "256Mi"

cpu: "100m"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

nodeSelector:

kubernetes.io/os: "linux"

restartPolicy: "Never"

volumes:

- name: "kaniko-secret"

secret:

items:

- key: ".dockerconfigjson"

path: "config.json"

secretName: "dockercred"

- emptyDir:

medium: ""

name: "workspace-volume"

- name: "shared-storage"

persistentVolumeClaim:

claimName: "jenkins-pv-claim"

Running on [week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm](http://localhost:32000/computer/week9-exercise1-feaex1-13-cj128-r2b4k-0wfbm/) in /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1

[Pipeline] {

[Pipeline] stage

[Pipeline] { (k8s)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

Cloning the remote Git repository

Cloning repository <https://github.com/bsieraduml/week9.git>

> git init /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1 # timeout=10

Fetching upstream changes from <https://github.com/bsieraduml/week9.git>

> git --version # timeout=10

> git --version # 'git version 2.30.2'

> git fetch --tags --force --progress -- <https://github.com/bsieraduml/week9.git> +refs/heads/\*:refs/remotes/origin/\* # timeout=10

> git config remote.origin.url <https://github.com/bsieraduml/week9.git> # timeout=10

> git config --add remote.origin.fetch +refs/heads/\*:refs/remotes/origin/\* # timeout=10

Avoid second fetch

Checking out Revision 9de688a42b0ce2b12e4facded94f0d7a81f24414 (refs/remotes/origin/feaEx1)

> git rev-parse refs/remotes/origin/feaEx1^{commit} # timeout=10

> git config core.sparsecheckout # timeout=10

> git checkout -f 9de688a42b0ce2b12e4facded94f0d7a81f24414 # timeout=10

> git branch -a -v --no-abbrev # timeout=10

> git checkout -b feaEx1 9de688a42b0ce2b12e4facded94f0d7a81f24414 # timeout=10

Commit message: "add sleep 30 after deployment"

> git rev-list --no-walk 7db5274012695485608f082052be4b33d17f56f3 # timeout=10

[Pipeline] container

[Pipeline] {

[Pipeline] stage

[Pipeline] { (rolling update calculator)

[Pipeline] sh

++ curl -L -s <https://dl.k8s.io/release/stable.txt>

+ curl -LO <https://dl.k8s.io/release/v1.26.3/bin/linux/amd64/kubectl>

% Total % Received % Xferd Average Speed Time Time Time Current

Dload Upload Total Spent Left Speed

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

100 138 100 138 0 0 951 0 --:--:-- --:--:-- --:--:-- 958

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

7 45.8M 7 3342k 0 0 2873k 0 0:00:16 0:00:01 0:00:15 3345k

14 45.8M 14 6605k 0 0 3038k 0 0:00:15 0:00:02 0:00:13 3286k

21 45.8M 21 9903k 0 0 3131k 0 0:00:14 0:00:03 0:00:11 3302k

28 45.8M 28 13.1M 0 0 3243k 0 0:00:14 0:00:04 0:00:10 3376k

35 45.8M 35 16.4M 0 0 3249k 0 0:00:14 0:00:05 0:00:09 3356k

43 45.8M 43 19.7M 0 0 3272k 0 0:00:14 0:00:06 0:00:08 3365k

50 45.8M 50 22.9M 0 0 3287k 0 0:00:14 0:00:07 0:00:07 3396k

57 45.8M 57 26.2M 0 0 3292k 0 0:00:14 0:00:08 0:00:06 3395k

65 45.8M 65 29.7M 0 0 3324k 0 0:00:14 0:00:09 0:00:05 3391k

72 45.8M 72 33.1M 0 0 3337k 0 0:00:14 0:00:10 0:00:04 3428k

78 45.8M 78 36.1M 0 0 3316k 0 0:00:14 0:00:11 0:00:03 3371k

85 45.8M 85 39.3M 0 0 3310k 0 0:00:14 0:00:12 0:00:02 3343k

93 45.8M 93 42.6M 0 0 3317k 0 0:00:14 0:00:13 0:00:01 3356k

100 45.8M 100 45.8M 0 0 3331k 0 0:00:14 0:00:14 --:--:-- 3344k

+ chmod +x ./kubectl

+ echo 'week 9 exercise 1 part 2 a - test sum and div with first image'

week 9 exercise 1 part 2 a - test sum and div with first image

+ ./kubectl delete deployment calculator-deployment -n staging

deployment.apps "calculator-deployment" deleted

+ ./kubectl apply -f calculator.yaml -n staging

deployment.apps/calculator-deployment created

service/calculator-service unchanged

+ ./kubectl apply -f hazelcast.yaml -n staging

deployment.apps/hazelcast unchanged

service/hazelcast unchanged

+ echo 'after deployment sleep 30 seconds'

after deployment sleep 30 seconds

+ sleep 30

++ curl 'calculator-service.staging.svc.cluster.local:8080/sum?a=10&b=2'

% Total % Received % Xferd Average Speed Time Time Time Current

Dload Upload Total Spent Left Speed

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

100 2 100 2 0 0 3 0 --:--:-- --:--:-- --:--:-- 3

100 2 100 2 0 0 3 0 --:--:-- --:--:-- --:--:-- 3

+ test 12 -eq 12

+ echo 'sum passes'

sum passes

++ curl 'calculator-service.staging.svc.cluster.local:8080/div?a=10&b=2'

% Total % Received % Xferd Average Speed Time Time Time Current

Dload Upload Total Spent Left Speed

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

100 124 0 124 0 0 253 0 --:--:-- --:--:-- --:--:-- 253

+ test '{"timestamp":"2023-03-24T23:12:15.424+0000","status":404,"error":"Not' 'Found","message":"No' message 'available","path":"/div"}' -eq 5

/home/jenkins/agent/workspace/week9\_exercise1\_feaEx1@tmp/durable-238ab489/script.sh: line 12: test: too many arguments

+ echo 'div fails'

div fails

+ echo 'week 9 exercise 1 part 2 b - test sum and div with second image'

week 9 exercise 1 part 2 b - test sum and div with second image

+ ./kubectl delete deployment calculator-deployment -n staging

deployment.apps "calculator-deployment" deleted

+ ./kubectl apply -f calculator2.yaml -n staging

deployment.apps/calculator-deployment created

service/calculator-service unchanged

+ echo 'after deployment sleep 30 seconds'

after deployment sleep 30 seconds

+ sleep 30

++ curl 'calculator-service.staging.svc.cluster.local:8080/sum?a=10&b=2'

% Total % Received % Xferd Average Speed Time Time Time Current

Dload Upload Total Spent Left Speed

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

100 2 100 2 0 0 3 0 --:--:-- --:--:-- --:--:-- 3

100 2 100 2 0 0 3 0 --:--:-- --:--:-- --:--:-- 3

+ test 12 -eq 12

+ echo 'sum passes'

sum passes

++ curl 'calculator-service.staging.svc.cluster.local:8080/div?a=10&b=2'

% Total % Received % Xferd Average Speed Time Time Time Current

Dload Upload Total Spent Left Speed

0 0 0 0 0 0 0 0 --:--:-- --:--:-- --:--:-- 0

100 1 100 1 0 0 41 0 --:--:-- --:--:-- --:--:-- 41

+ test 5 -eq 5

+ echo 'div passes'

div passes

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // container

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // node

[Pipeline] }

[Pipeline] // podTemplate

[Pipeline] End of Pipeline

Could not update commit status, please check if your scan credentials belong to a member of the organization or a collaborator of the repository and repo:status scope is selected

GitHub has been notified of this commit’s build result

Finished: SUCCESS

**Describe your solution, including any problems you find and how you fixed them.**

In test one, I demonstrated I’m able to modify a deployment by updating my \*.yaml file and applying it in my pipeline (where I changed the replica count from 3 to 4) via rolling updates. The only problem I had was getting my pull requests in github to trigger my Jenkins instance (I forgot to install sidecar on the borrowed Windows 11 machine last week as I was having issues with my Apple M1 arm64 machine). Once that was in place, I began to receive callbacks in Jenkins from github. In test two, I followed a pattern of: tear down, deploy, sleep (giving my deployment a chance to complete), and test for two different calculator images. The first calculator image (dlambrig/hello-kaniko:0.5) only had the sum service (not the div service). The second calculator image (dlambrig/week8:1.1) has both the sum and div services. In my console log output, we can see the both images passed my curl test for the sum service, but the first image failed (404 not found) on the div service (obviously expected). Both tests passed with the second image (also expected). I was planning to try and use arguments with my deployment yaml file (so I could dynamically change the image source name and repurpose a single yaml file) but I didn’t find it easy to implement. I ended up using two distinct yaml files (you can see this in my second Jenkinsfile) where each yaml file defines at different calculator image source. The biggest problem I had with this test was related to github callbacks and Jenkins making me wait 45 minutes many times (and I’m not making many PR requests).

1. **Pipeline deploying to ‘production’ in Google’s cloud.**

I will provide 2 console log outputs below, one will show how I tested my logic such that if the smoke test fails, the push to production in ‘gcloud’ does not run (my sanity check). My second console log output shows the test being successful and my ‘push to prod’ stage runs, pushing my calculator service to Google’s cloud infrastructure.

**Jenkinsfile: (this is my final Jenkinsfile, does not contain the logic that intentionally failed the smoke test)**

podTemplate(yaml: '''

apiVersion: v1

kind: Pod

spec:

containers:

- name: cloud-sdk

image: google/cloud-sdk

command:

- sleep

args:

- 999999

volumeMounts:

- name: shared-storage

mountPath: /mnt

- name: google-cloud-key

mountPath: /var/secrets/google

env:

- name: GOOGLE\_APPLICATION\_CREDENTIALS

value: /var/secrets/google/umls23-381500-911c6262500f.json

- name: gradle

image: gradle:8-jdk8

command:

- sleep

args:

- 99d

volumeMounts:

- name: shared-storage

mountPath: /mnt

- name: centos

image: centos

command:

- sleep

args:

- 99d

restartPolicy: Never

volumes:

- name: shared-storage

persistentVolumeClaim:

claimName: jenkins-pv-claim

- name: google-cloud-key

secret:

secretName: sdk-key

- name: kaniko-secret

secret:

secretName: dockercred

items:

- key: .dockerconfigjson

path: config.json

''') {

node(POD\_LABEL) {

boolean testPassed = true

stage('k8s') {

stage('Build a gradle project') {

git branch: 'main', url: 'https://github.com/bsieraduml/week8.git'

container('gradle') {

stage("Smoke Test") {

try {

sh '''

chmod +x gradlew

./gradlew smokeTest -Dcalculator.url=http://calculator-service.staging.svc.cluster.local:8080

'''

} catch (Exception E) {

echo 'Failure detected'

testPassed = false

}

} // stage smoke test

} // gradle

} // Build a gradle project

stage('Deploying to prod') {

if (testPassed)

{

container('cloud-sdk') {

git branch: 'feaEx1', url: 'https://github.com/bsieraduml/week9.git'

stage('Deploy to prod from cloud-sdk container') {

sh '''

echo 'test passed pushing to production'

echo 'pwd'

pwd

echo 'ls -lart'

ls -lart

echo 'namespaces in staging'

kubectl get ns

gcloud auth login --cred-file=$GOOGLE\_APPLICATION\_CREDENTIALS

gcloud container clusters get-credentials hello-cluster --region us-west1 --project umls23-381500

echo 'namespaces in prod'

kubectl get ns

echo 'apply calculator deployment to prod'

kubectl apply -f ./hazelcast.yaml -n prod

kubectl apply -f ./calculator2.yaml -n prod

'''

}

}

} else {

echo 'test failed not deploying to production'

}

} // deploying to prod

}// k8s

} // NODE pod label

} //root

**Console Log Output (showing smoke test failure and not running the stage to push to prod):**

Started by user [Ben Sieradzki](http://localhost:32000/user/bsierad)

00:46:19 Connecting to [https://api.github.com](https://api.github.com/) using bsieraduml/\*\*\*\*\*\*

00:46:19 GitHub throttling is disabled, which is not allowed for public GitHub usage, so ThrottleOnOver will be used instead. To configure a different rate limiting strategy, go to "GitHub API usage" under "Configure System" in the Jenkins settings.

Obtained Jenkinsfile from 3de8128328c2b97fd096bca1bed751d61efb6f20

[Pipeline] Start of Pipeline

[Pipeline] podTemplate

[Pipeline] {

[Pipeline] node

Created Pod: kubernetes devops-tools/week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4

Agent [week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4](http://localhost:32000/computer/week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4) is provisioned from template week9\_exercise1\_feaEx1\_17-spgfk-brdsq

---

apiVersion: "v1"

kind: "Pod"

metadata:

annotations:

buildUrl: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/job/week9_exercise1/job/feaEx1/17/>"

runUrl: "job/week9\_exercise1/job/feaEx1/17/"

labels:

jenkins: "agent"

jenkins/label-digest: "49f84bc0a1ad49855ce37c72c2fe42e27cfc8ecf"

jenkins/label: "week9\_exercise1\_feaEx1\_17-spgfk"

name: "week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4"

namespace: "devops-tools"

spec:

containers:

- args:

- "999999"

command:

- "sleep"

env:

- name: "GOOGLE\_APPLICATION\_CREDENTIALS"

value: "/var/secrets/google/umls23-381500-911c6262500f.json"

image: "google/cloud-sdk"

name: "cloud-sdk"

volumeMounts:

- mountPath: "/mnt"

name: "shared-storage"

- mountPath: "/var/secrets/google"

name: "google-cloud-key"

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- args:

- "99d"

command:

- "sleep"

image: "gradle:8-jdk8"

name: "gradle"

volumeMounts:

- mountPath: "/mnt"

name: "shared-storage"

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- args:

- "99d"

command:

- "sleep"

image: "centos"

name: "centos"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- env:

- name: "JENKINS\_SECRET"

value: "\*\*\*\*\*\*\*\*"

- name: "JENKINS\_AGENT\_NAME"

value: "week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4"

- name: "JENKINS\_NAME"

value: "week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4"

- name: "JENKINS\_AGENT\_WORKDIR"

value: "/home/jenkins/agent"

- name: "JENKINS\_URL"

value: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/>"

image: "jenkins/inbound-agent:3107.v665000b\_51092-4"

name: "jnlp"

resources:

requests:

memory: "256Mi"

cpu: "100m"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

nodeSelector:

kubernetes.io/os: "linux"

restartPolicy: "Never"

volumes:

- name: "kaniko-secret"

secret:

items:

- key: ".dockerconfigjson"

path: "config.json"

secretName: "dockercred"

- name: "google-cloud-key"

secret:

secretName: "sdk-key"

- emptyDir:

medium: ""

name: "workspace-volume"

- name: "shared-storage"

persistentVolumeClaim:

claimName: "jenkins-pv-claim"

Running on [week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4](http://localhost:32000/computer/week9-exercise1-feaex1-17-spgfk-brdsq-g5rx4/) in /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1

[Pipeline] {

[Pipeline] stage

[Pipeline] { (k8s)

[Pipeline] stage

[Pipeline] { (Build a gradle project)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

Cloning the remote Git repository

Cloning repository <https://github.com/bsieraduml/week8.git>

> git init /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1 # timeout=10

Fetching upstream changes from <https://github.com/bsieraduml/week8.git>

> git --version # timeout=10

> git --version # 'git version 2.30.2'

> git fetch --tags --force --progress -- <https://github.com/bsieraduml/week8.git> +refs/heads/\*:refs/remotes/origin/\* # timeout=10

> git config remote.origin.url <https://github.com/bsieraduml/week8.git> # timeout=10

> git config --add remote.origin.fetch +refs/heads/\*:refs/remotes/origin/\* # timeout=10

Avoid second fetch

Checking out Revision adb724cb79f3ac560271fbcdca9dab75fd4531c7 (refs/remotes/origin/main)

Commit message: "add div test"

> git rev-parse refs/remotes/origin/main^{commit} # timeout=10

> git config core.sparsecheckout # timeout=10

> git checkout -f adb724cb79f3ac560271fbcdca9dab75fd4531c7 # timeout=10

> git branch -a -v --no-abbrev # timeout=10

> git checkout -b main adb724cb79f3ac560271fbcdca9dab75fd4531c7 # timeout=10

> git rev-list --no-walk adb724cb79f3ac560271fbcdca9dab75fd4531c7 # timeout=10

[Pipeline] container

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Smoke Test)

[Pipeline] sh

+ chmod +x gradlew

+ echo intentional smoke test failure to ensure prod logic

intentional smoke test failure to ensure prod logic

+ ./gradlew smokeTest

Downloading <https://services.gradle.org/distributions/gradle-4.10.2-bin.zip>

..........................................................................

Welcome to Gradle 4.10.2!

Here are the highlights of this release:

- Incremental Java compilation by default

- Periodic Gradle caches cleanup

- Gradle Kotlin DSL 1.0-RC6

- Nested included builds

- SNAPSHOT plugin versions in the `plugins {}` block

For more details see <https://docs.gradle.org/4.10.2/release-notes.html>

Starting a Gradle Daemon (subsequent builds will be faster)

> Task :compileJava

> Task :processResources

> Task :classes

> Task :compileTestJava

> Task :processTestResources

> Task :testClasses

> Task :smokeTest

acceptance.AcceptanceTest > Calculator.Sum two numbers FAILED

java.lang.IllegalArgumentException

acceptance.AcceptanceTest > Calculator.Divide two numbers FAILED

java.lang.IllegalArgumentException

2 tests completed, 2 failed

> Task :smokeTest FAILED

FAILURE: Build failed with an exception.

\* What went wrong:

Execution failed for task ':smokeTest'.

> There were failing tests. See the report at: [file:///home/jenkins/agent/workspace/week9\_exercise1\_feaEx1/build/reports/tests/smokeTest/index.html](file:///\\home\jenkins\agent\workspace\week9_exercise1_feaEx1\build\reports\tests\smokeTest\index.html)

\* Try:

Run with --stacktrace option to get the stack trace. Run with --info or --debug option to get more log output. Run with --scan to get full insights.

\* Get more help at [https://help.gradle.org](https://help.gradle.org/)

BUILD FAILED in 2m 3s

5 actionable tasks: 5 executed

[Pipeline] echo

Failure detected

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // container

[Pipeline] }

[Pipeline] // stage

[Pipeline] stage

[Pipeline] { (Deploying to prod)

[Pipeline] echo

test failed not deploying to production

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // node

[Pipeline] }

[Pipeline] // podTemplate

[Pipeline] End of Pipeline

Could not update commit status, please check if your scan credentials belong to a member of the organization or a collaborator of the repository and repo:status scope is selected

GitHub has been notified of this commit’s build result

Finished: SUCCESS

**Console Log Output (showing smoke test success and pushing to prod):**

Started by user [Ben Sieradzki](http://localhost:32000/user/bsierad)

01:54:37 Connecting to [https://api.github.com](https://api.github.com/) using bsieraduml/\*\*\*\*\*\*

01:54:37 GitHub throttling is disabled, which is not allowed for public GitHub usage, so ThrottleOnOver will be used instead. To configure a different rate limiting strategy, go to "GitHub API usage" under "Configure System" in the Jenkins settings.

Obtained Jenkinsfile from 73948bf12ccf18724573e6fc32c2c38cd7f94bca

[Pipeline] Start of Pipeline

[Pipeline] podTemplate

[Pipeline] {

[Pipeline] node

Created Pod: kubernetes devops-tools/week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn

Agent [week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn](http://localhost:32000/computer/week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn) is provisioned from template week9\_exercise1\_feaEx1\_25-4fhw8-ldzmp

---

apiVersion: "v1"

kind: "Pod"

metadata:

annotations:

buildUrl: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/job/week9_exercise1/job/feaEx1/25/>"

runUrl: "job/week9\_exercise1/job/feaEx1/25/"

labels:

jenkins: "agent"

jenkins/label-digest: "02a2eb7d74c7e52d4a135b21a7c88934b5dc3895"

jenkins/label: "week9\_exercise1\_feaEx1\_25-4fhw8"

name: "week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn"

namespace: "devops-tools"

spec:

containers:

- args:

- "999999"

command:

- "sleep"

env:

- name: "GOOGLE\_APPLICATION\_CREDENTIALS"

value: "/var/secrets/google/umls23-381500-911c6262500f.json"

image: "google/cloud-sdk"

name: "cloud-sdk"

volumeMounts:

- mountPath: "/mnt"

name: "shared-storage"

- mountPath: "/var/secrets/google"

name: "google-cloud-key"

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- args:

- "99d"

command:

- "sleep"

image: "gradle:8-jdk8"

name: "gradle"

volumeMounts:

- mountPath: "/mnt"

name: "shared-storage"

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- args:

- "99d"

command:

- "sleep"

image: "centos"

name: "centos"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

- env:

- name: "JENKINS\_SECRET"

value: "\*\*\*\*\*\*\*\*"

- name: "JENKINS\_AGENT\_NAME"

value: "week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn"

- name: "JENKINS\_NAME"

value: "week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn"

- name: "JENKINS\_AGENT\_WORKDIR"

value: "/home/jenkins/agent"

- name: "JENKINS\_URL"

value: "<http://jenkins-service.devops-tools.svc.cluster.local:8080/>"

image: "jenkins/inbound-agent:3107.v665000b\_51092-4"

name: "jnlp"

resources:

requests:

memory: "256Mi"

cpu: "100m"

volumeMounts:

- mountPath: "/home/jenkins/agent"

name: "workspace-volume"

readOnly: false

nodeSelector:

kubernetes.io/os: "linux"

restartPolicy: "Never"

volumes:

- name: "kaniko-secret"

secret:

items:

- key: ".dockerconfigjson"

path: "config.json"

secretName: "dockercred"

- name: "google-cloud-key"

secret:

secretName: "sdk-key"

- emptyDir:

medium: ""

name: "workspace-volume"

- name: "shared-storage"

persistentVolumeClaim:

claimName: "jenkins-pv-claim"

Running on [week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn](http://localhost:32000/computer/week9-exercise1-feaex1-25-4fhw8-ldzmp-r3gsn/) in /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1

[Pipeline] {

[Pipeline] stage

[Pipeline] { (k8s)

[Pipeline] stage

[Pipeline] { (Build a gradle project)

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

Cloning the remote Git repository

Cloning repository <https://github.com/bsieraduml/week8.git>

> git init /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1 # timeout=10

Fetching upstream changes from <https://github.com/bsieraduml/week8.git>

> git --version # timeout=10

> git --version # 'git version 2.30.2'

> git fetch --tags --force --progress -- <https://github.com/bsieraduml/week8.git> +refs/heads/\*:refs/remotes/origin/\* # timeout=10

> git config remote.origin.url <https://github.com/bsieraduml/week8.git> # timeout=10

> git config --add remote.origin.fetch +refs/heads/\*:refs/remotes/origin/\* # timeout=10

Avoid second fetch

Checking out Revision adb724cb79f3ac560271fbcdca9dab75fd4531c7 (refs/remotes/origin/main)

Commit message: "add div test"

> git rev-parse refs/remotes/origin/main^{commit} # timeout=10

> git config core.sparsecheckout # timeout=10

> git checkout -f adb724cb79f3ac560271fbcdca9dab75fd4531c7 # timeout=10

> git branch -a -v --no-abbrev # timeout=10

> git checkout -b main adb724cb79f3ac560271fbcdca9dab75fd4531c7 # timeout=10

> git rev-list --no-walk adb724cb79f3ac560271fbcdca9dab75fd4531c7 # timeout=10

[Pipeline] container

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Smoke Test)

[Pipeline] sh

+ chmod +x gradlew

+ ./gradlew smokeTest -Dcalculator.url=[http://calculator-service.staging.svc.cluster.local:8080](http://calculator-service.staging.svc.cluster.local:8080/)

Downloading <https://services.gradle.org/distributions/gradle-4.10.2-bin.zip>

..........................................................................

Welcome to Gradle 4.10.2!

Here are the highlights of this release:

- Incremental Java compilation by default

- Periodic Gradle caches cleanup

- Gradle Kotlin DSL 1.0-RC6

- Nested included builds

- SNAPSHOT plugin versions in the `plugins {}` block

For more details see <https://docs.gradle.org/4.10.2/release-notes.html>

Starting a Gradle Daemon (subsequent builds will be faster)

> Task :compileJava

> Task :processResources

> Task :classes

> Task :compileTestJava

> Task :processTestResources

> Task :testClasses

> Task :smokeTest

BUILD SUCCESSFUL in 2m 8s

5 actionable tasks: 5 executed

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // container

[Pipeline] }

[Pipeline] // stage

[Pipeline] stage

[Pipeline] { (Deploying to prod)

[Pipeline] container

[Pipeline] {

[Pipeline] git

The recommended git tool is: NONE

No credentials specified

Warning: JENKINS-30600: special launcher org.csanchez.jenkins.plugins.kubernetes.pipeline.ContainerExecDecorator$1@468370ec; decorates RemoteLauncher[hudson.remoting.Channel@4fd9e23b:JNLP4-connect connection from 10.1.0.86/10.1.0.86:36234] will be ignored (a typical symptom is the Git executable not being run inside a designated container)

Fetching changes from the remote Git repository

> git rev-parse --resolve-git-dir /home/jenkins/agent/workspace/week9\_exercise1\_feaEx1/.git # timeout=10

> git config remote.origin.url <https://github.com/bsieraduml/week9.git> # timeout=10

Fetching upstream changes from <https://github.com/bsieraduml/week9.git>

> git --version # timeout=10

> git --version # 'git version 2.30.2'

> git fetch --tags --force --progress -- <https://github.com/bsieraduml/week9.git> +refs/heads/\*:refs/remotes/origin/\* # timeout=10

Checking out Revision 73948bf12ccf18724573e6fc32c2c38cd7f94bca (refs/remotes/origin/feaEx1)

> git rev-parse refs/remotes/origin/feaEx1^{commit} # timeout=10

> git config core.sparsecheckout # timeout=10

> git checkout -f 73948bf12ccf18724573e6fc32c2c38cd7f94bca # timeout=10

> git branch -a -v --no-abbrev # timeout=10

> git checkout -b feaEx1 73948bf12ccf18724573e6fc32c2c38cd7f94bca # timeout=10

Commit message: "fix branch"

> git rev-list --no-walk 5f6ea171c961faf6bcf270a29c15dd50b12c6d5f # timeout=10

[Pipeline] stage

[Pipeline] { (Deploy to prod from cloud-sdk container)

[Pipeline] sh

+ echo test passed pushing to production

test passed pushing to production

+ echo pwd

pwd

+ pwd

/home/jenkins/agent/workspace/week9\_exercise1\_feaEx1

+ echo ls -lart

ls -lart

+ ls -lart

total 1068

-rw-r--r-- 1 cloudsdk cloudsdk 487 Mar 25 01:55 hazelcast.yaml

drwxr-xr-x 4 cloudsdk cloudsdk 4096 Mar 25 01:55 ..

drwxr-xr-x 5 root root 4096 Mar 25 01:55 .gradle

drwxr-xr-x 8 root root 4096 Mar 25 01:57 build

-rw-r--r-- 1 cloudsdk cloudsdk 162 Mar 25 01:57 ~$ieradzki\_week9\_exercise.docx

-rw-r--r-- 1 cloudsdk cloudsdk 370 Mar 25 01:57 week9\_exercise1.txt

-rw-r--r-- 1 cloudsdk cloudsdk 2326 Mar 25 01:57 umls23-381500-911c6262500f.json

-rw-r--r-- 1 cloudsdk cloudsdk 506 Mar 25 01:57 tempHolder.txt

-rw-r--r-- 1 cloudsdk cloudsdk 2016 Mar 25 01:57 jenkins-full-deployment.yaml

-rw-r--r-- 1 cloudsdk cloudsdk 638 Mar 25 01:57 calculator2.yaml

-rw-r--r-- 1 cloudsdk cloudsdk 645 Mar 25 01:57 calculator.yaml

-rw-r--r-- 1 cloudsdk cloudsdk 519170 Mar 25 01:57 bsieradzki\_week9\_exercise.docx

-rw-r--r-- 1 cloudsdk cloudsdk 1231 Mar 25 01:57 Jenkinsfile\_week9\_1\_1

-rw-r--r-- 1 cloudsdk cloudsdk 1294 Mar 25 01:57 Jenkinsfile\_gcloud

-rw-r--r-- 1 cloudsdk cloudsdk 2274 Mar 25 01:57 Jenkinsfile week9\_1\_2

-rw-r--r-- 1 cloudsdk cloudsdk 2889 Mar 25 01:57 Jenkinsfile

drwxr-xr-x 5 cloudsdk cloudsdk 4096 Mar 25 01:57 .

-rw-r--r-- 1 cloudsdk cloudsdk 500302 Mar 25 01:57 ~WRL0005.tmp

drwxr-xr-x 8 cloudsdk cloudsdk 4096 Mar 25 01:57 .git

+ echo namespaces in staging

namespaces in staging

+ kubectl get ns

NAME STATUS AGE

default Active 5d11h

devops-tools Active 5d11h

kube-node-lease Active 5d11h

kube-public Active 5d11h

kube-system Active 5d11h

staging Active 27h

+ gcloud auth login --cred-file=/var/secrets/google/umls23-381500-911c6262500f.json

Authenticated with service account credentials for: [svcaccountumls23@umls23-381500.iam.gserviceaccount.com].

Your current project is [None]. You can change this setting by running:

$ gcloud config set project PROJECT\_ID

+ gcloud container clusters get-credentials hello-cluster --region us-west1 --project umls23-381500

Fetching cluster endpoint and auth data.

kubeconfig entry generated for hello-cluster.

+ echo namespaces in prod

namespaces in prod

+ kubectl get ns

NAME STATUS AGE

default Active 2d1h

kube-node-lease Active 2d1h

kube-public Active 2d1h

kube-system Active 2d1h

prod Active 18m

+ echo apply calculator deployment to prod

apply calculator deployment to prod

+ kubectl apply -f ./hazelcast.yaml -n prod

deployment.apps/hazelcast unchanged

service/hazelcast unchanged

+ kubectl apply -f ./calculator2.yaml -n prod

Warning: Autopilot set default resource requests for Deployment prod/calculator-deployment, as resource requests were not specified. See <http://g.co/gke/autopilot-defaults>

deployment.apps/calculator-deployment created

service/calculator-service created

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // container

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // stage

[Pipeline] }

[Pipeline] // node

[Pipeline] }

[Pipeline] // podTemplate

[Pipeline] End of Pipeline

Could not update commit status, please check if your scan credentials belong to a member of the organization or a collaborator of the repository and repo:status scope is selected

GitHub has been notified of this commit’s build result

Finished: SUCCESS

**Submit a screenshot of the console (https://console.cloud.google.com/kubernetes/workload/) showing the pods running:**

Below, I’m using ‘umlS23’ for my project, I’m showing I’m logged in under my UML email account, and I’m showing my pods running in Google Cloud.

Graphical user interface, text, application, email

Description automatically generated

**Describe solution/problems:**

I had issues with my Google service which took the most time this week. I had my json filename incorrectly defined in my Jenkinsfile for environmental variable: GOOGLE\_APPLICATION\_CREDENTIALS. This had the side effect of Jenkins just spinning it’s wheels and not doing anything for many build attempts (for many hours). Once I figured that out (no hints provided anywhere) I was able to test my pipeline. In step two, I first wanted to ensure that if my test fails, it would not run any part of the stage that pushes deployments to production (my first console log output shown above). Once that was working, I added some echo statements in my stage for production deployments when I got my smoke test to pass. I’m using a simple boolean variable in my pipeline to control the logic flow based on the result of my smoke test. Note I did end up keeping some debug statements in my pipeline (pwd, ls -lart, echo). Finally, once all that was in place, I added the logic to push my deployment (I’m using namespace prod in the cloud). Namespacing was another issue, if I tried kubectl apply -f [filename] without any namespace, the pipeline wanted to use the devops-tools namespace, but if I created a namespace (prod) and then deployed to (prod) things worked (so somehow the pipeline was trying to default to the namespace that it was running under itself (unsure on this at the moment). Anyways, I was able to get through all the steps this week (using Windows 11 for the smoke test step helped). It took between 10 and 16 hours (I wasn’t counting, an estimate of 3-4 hours for four days in a row). Finally, I’m still not confident with pull requests and proper setup in Jenkins. I seem to fight throttling all the time (with very few PR requests). I also oftentimes see PR builds fail with the following error message: **ERROR: Couldn't find any revision to build. Verify the repository and branch configuration for this job.**