Cloud Native Operations Final Test

LZU1431263

Table of Contents

Revision History

S.No	Date	Change Description	Document Version	Prepared By /Modified By
1	09-05-2024	Final draft	PA1	ehanmdr
2				
3				

1 Final Test Instructions

Power-up your Nocentino lab, 4 nodes preferably.

Read the instructions carefully.

This is an open book test. You can work as a team if you prefer, but all tasks and output must come from your own lab. There is no single Team leader in this assessment test. You are all team leaders.

Make sure you do not have any leftover resources from previous exercises. You will immediately loose points if you have ANY leftovers from previous work/exercises/fun things you tried on your own. Your lab MUST BE a plain vanilla cluster like you created in the first week of your Nocentino training.

If you are working as a team, everyone MUST provide insights and validate others during the assessment test (we are One Ericsson, so we all fail if the wrong solution is provided to the customer and an outage occurs).

Hint: you have noticed during your group exercises that there are different ways to approach a symptom and different ways to solve the problem(s). This could be something to consider today during your assessment test: divide and conquer if too many issues are found and time is ticking, or if you need to test different solutions to a problem.

Each question may have sub questions. (#1 #2 #3) Ensure you read each request, and ensure you provide answers for each of them.

Hint2: Port forwarding will help you here, whether it is for HTTP/GUI access, or to sftp things to/from your lab. Ensure you remember how to set-ip up or verify if it is set-up correctly.

Action: After reading and understanding the above, #1 immediately send an email to your instructor stating you are starting your assessment test, #2 you understood all the above points, and #3 in that same email, describe what is the dessert / sweets you like the most, share a picture of it if you'd like.

When all the above is done and understood, #4 start your final assessment test below 😊

Example of a good answer:

Question: What ip address the pod busybox1 has ?

```
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$ kubectl get pod/busybox1 -o wide
NAME       READY   STATUS    RESTARTS   AGE   IP               NODE          NOMINATED NODE   READINESS GATES
busybox1   1/1     Running   0          38s   172.16.160.246   my-ubuntu-2   <none>           <none>
(Martin Chabot - emachab) ericsson@my-ubuntu-1:~$
```

2 Test Questions

Estimated hours: 3.0

2.1 Question 1

An Ericsson customer provided you multiple files. This customer is going through Kubernetes training and unfortunately, too many people are touching the scripts and breaking them.

The customer reached to Ericsson asking help from your team with finding the issues in each of their scripts/task and they are asking you to find resolutions.

The customer has a lab that looks very similar to your Nocentino lab.

Apply file1.yaml in your Nocentino lab. Ensure all the resources deployed stay up and healthy. Provide the output of 'kubectl get all -A'

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#2: Solution for customer few steps given in below:

- Firstly I checked server side and client side validation for file1.yaml file.
- Both validation was okay.

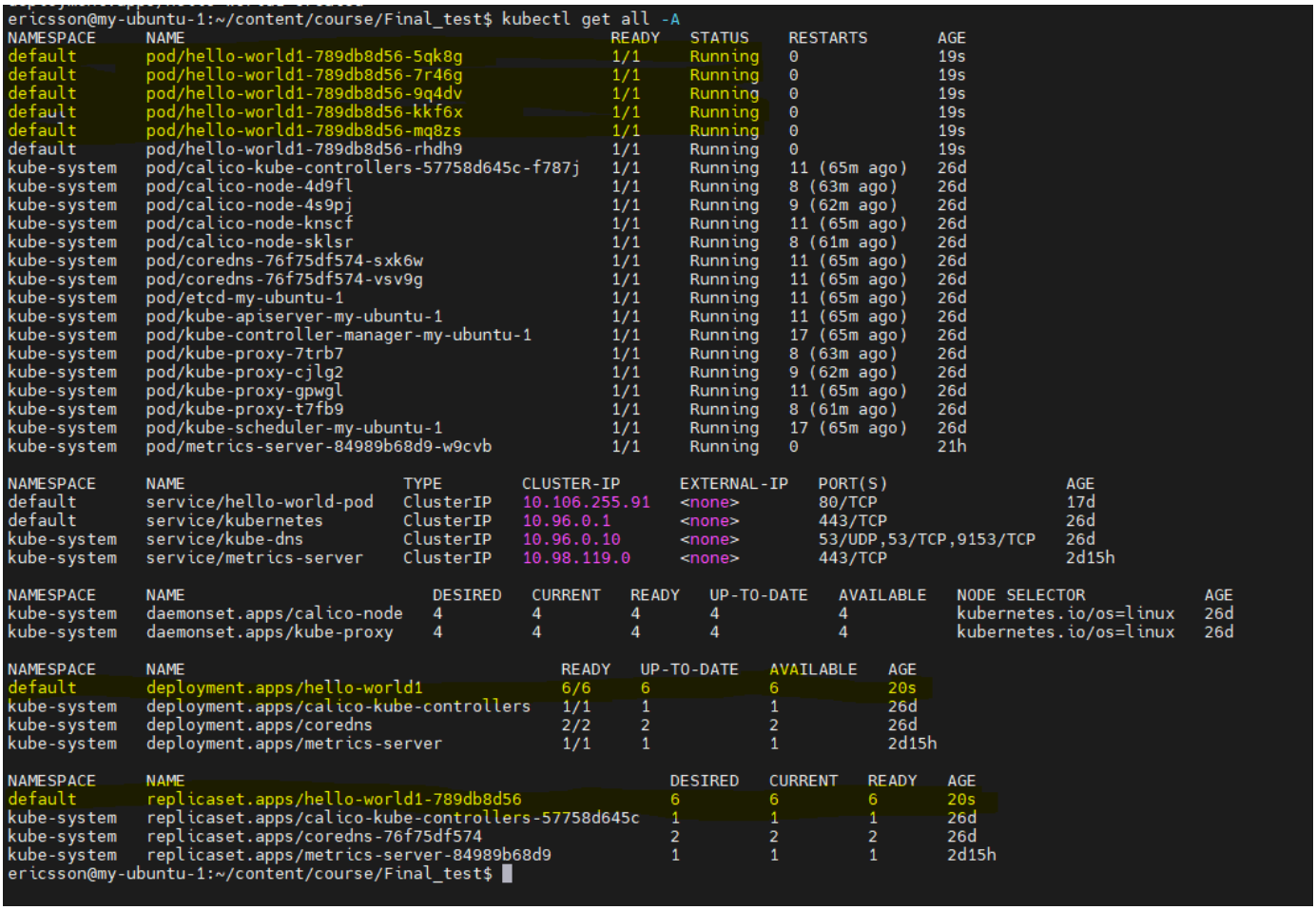
```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file1.yaml --dry-run=client
deployment.apps/hello-world1 created (dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file1.yaml --dry-run=server
deployment.apps/hello-world1 created (server dry run)
```

- Then deployed the file1.ymal file. Deployment.apps/hello-world1 successfully created.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file1.yaml
deployment.apps/hello-world1 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
```

#3: All the resources deployed stay up and healthy we confirm form below screen short.



2.2 Question 2

Remove all the resources created by file1.yaml from your lab and apply file2.yaml.

Here screen shoot: all resource removed from file1.yaml.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl delete deployments hello-world1
deployment.apps "hello-world1" deleted
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                           READY   STATUS    RESTARTS       AGE
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running   11 (72m ago)   26d
kube-system   pod/calico-node-4d9fl                          1/1     Running   8 (70m ago)    26d
kube-system   pod/calico-node-4s9pj                          1/1     Running   9 (69m ago)    26d
kube-system   pod/calico-node-knscf                          1/1     Running   11 (72m ago)   26d
kube-system   pod/calico-node-sklsr                          1/1     Running   8 (67m ago)    26d
kube-system   pod/coredns-76f75df574-sxk6w                   1/1     Running   11 (72m ago)   26d
kube-system   pod/coredns-76f75df574-vsv9g                   1/1     Running   11 (72m ago)   26d
kube-system   pod/etcd-my-ubuntu-1                           1/1     Running   11 (72m ago)   26d
kube-system   pod/kube-apiserver-my-ubuntu-1                 1/1     Running   11 (72m ago)   26d
kube-system   pod/kube-controller-manager-my-ubuntu-1        1/1     Running   17 (72m ago)   26d
kube-system   pod/kube-proxy-7trb7                           1/1     Running   8 (70m ago)    26d
kube-system   pod/kube-proxy-cjlg2                           1/1     Running   9 (69m ago)    26d
kube-system   pod/kube-proxy-gpwgl                           1/1     Running   11 (72m ago)   26d
kube-system   pod/kube-proxy-t7fb9                           1/1     Running   8 (67m ago)    26d
kube-system   pod/kube-scheduler-my-ubuntu-1                 1/1     Running   17 (72m ago)   26d
kube-system   pod/metrics-server-84989b68d9-w9cvb            1/1     Running   0              21h

NAMESPACE     NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP                  26d
kube-system   service/kube-dns         ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   26d
kube-system   service/metrics-server   ClusterIP   10.98.119.0     <none>        443/TCP                  2d15h

NAMESPACE     NAME                        DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node  4         4         4       4            4           kubernetes.io/os=linux   26d
kube-system   daemonset.apps/kube-proxy   4         4         4       4            4           kubernetes.io/os=linux   26d

NAMESPACE     NAME                                    READY   UP-TO-DATE   AVAILABLE   AGE
kube-system   deployment.apps/calico-kube-controllers   1/1     1            1           26d
kube-system   deployment.apps/coredns                   2/2     2            2           26d
kube-system   deployment.apps/metrics-server            1/1     1            1           2d15h

NAMESPACE     NAME                                              DESIRED   CURRENT   READY   AGE
kube-system   replicaset.apps/calico-kube-controllers-57758d645c   1         1         1       26d
kube-system   replicaset.apps/coredns-76f75df574                  2         2         2       26d
kube-system   replicaset.apps/metrics-server-84989b68d9           1         1         1       2d15h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

Explain #1 what are the issues you see,

- Step1: Server-side validation checked.
- Step2: Client-side validation checked.
- Step3. Deploy the file2.yaml

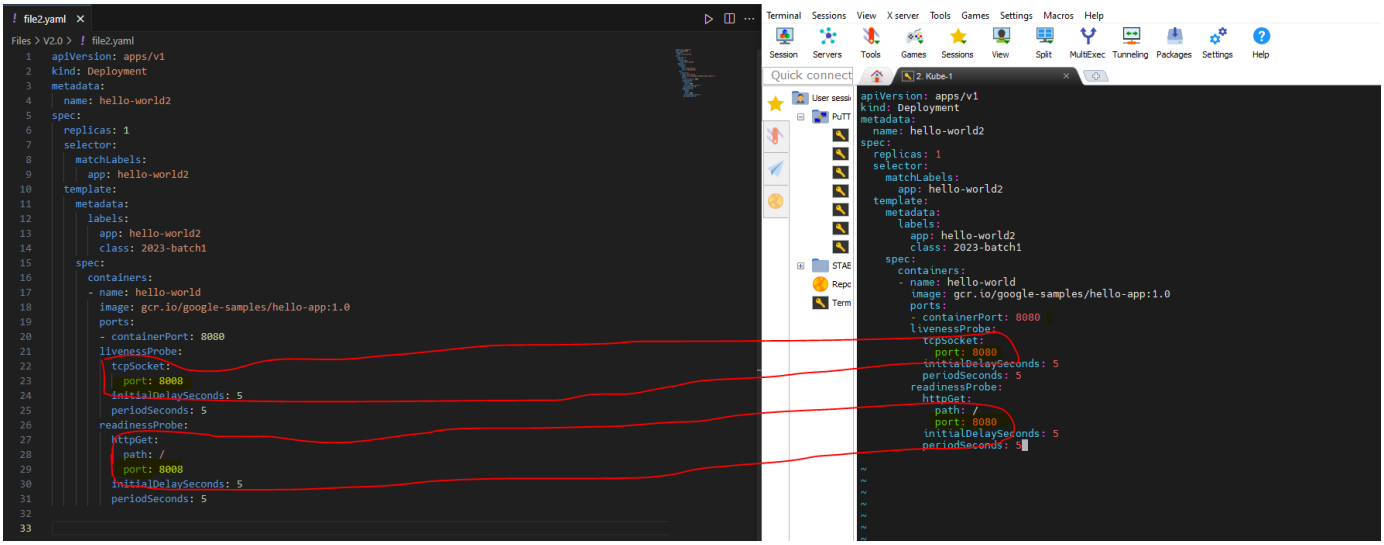
```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml --dry-run=client
deployment.apps/hello-world2 created (dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml --dry-run=server
deployment.apps/hello-world2 created (server dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml
deployment.apps/hello-world2 created
```

- I found under default namespace pod are CrashloopBackoff.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                           READY   STATUS             RESTARTS       AGE
default       pod/hello-world2-65cd7875c-6z8sd               0/1     CrashLoopBackOff   5 (58s ago)    3m54s
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running            11 (97m ago)   27d
kube-system   pod/calico-node-4d9fl                          1/1     Running            8 (95m ago)    26d
kube-system   pod/calico-node-4s9pj                          1/1     Running            9 (94m ago)    26d
kube-system   pod/calico-node-knscf                          1/1     Running            11 (97m ago)   27d
kube-system   pod/calico-node-sklsr                          1/1     Running            8 (93m ago)    26d
kube-system   pod/coredns-76f75df574-sxk6w                   1/1     Running            11 (97m ago)   27d
kube-system   pod/coredns-76f75df574-vsv9g                   1/1     Running            11 (97m ago)   27d
kube-system   pod/etcd-my-ubuntu-1                           1/1     Running            11 (97m ago)   27d
kube-system   pod/kube-apiserver-my-ubuntu-1                 1/1     Running            11 (97m ago)   27d
kube-system   pod/kube-controller-manager-my-ubuntu-1        1/1     Running            17 (97m ago)   27d
kube-system   pod/kube-proxy-7trb7                           1/1     Running            8 (95m ago)    26d
kube-system   pod/kube-proxy-cjlg2                           1/1     Running            9 (94m ago)    26d
kube-system   pod/kube-proxy-gpwgl                           1/1     Running            11 (97m ago)   27d
kube-system   pod/kube-proxy-t7fb9                           1/1     Running            8 (93m ago)    26d
kube-system   pod/kube-scheduler-my-ubuntu-1                 1/1     Running            17 (97m ago)   27d
kube-system   pod/metrics-server-84989b68d9-w9cvb            1/1     Running            0              22h

NAMESPACE     NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP                  27d
kube-system   service/kube-dns         ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server   ClusterIP   10.98.119.0     <none>        443/TCP                  2d15h

NAMESPACE     NAME                        DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node  4         4         4       4            4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy   4         4         4       4            4           kubernetes.io/os=linux   27d

NAMESPACE     NAME                                  READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2          0/1     1            0           3m55s
kube-system   deployment.apps/calico-kube-controllers   1/1     1            1           27d
kube-system   deployment.apps/coredns               2/2     2            2           27d
kube-system   deployment.apps/metrics-server        1/1     1            1           2d15h

NAMESPACE     NAME                                             DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world2-65cd7875c           1         1         0       3m55s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c   1         1         1       27d
kube-system   replicaset.apps/coredns-76f75df574               2         2         2       27d
kube-system   replicaset.apps/metrics-server-84989b68d9        1         1         1       2d15h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

- In the livenessProbe, you're using port: 8008, while in the readinessProbe, you're using port: 8008. It seems like there's a typo, and both should probably be port: 8080, matching the container port where the application is listening.
- In the livenessProbe, you're using tcpSocket protocol, which checks whether the specified port on the container is accepting TCP connections. However, in the readinessProbe, you're using httpGet protocol, which performs an HTTP GET request to the specified path and port. These probes should ideally use the same protocol for consistency.



#2 what solutions you would propose to the customer and

- Solution is propose need to update the port 8008 to 8080 for livenessProbe and readinessProbe in file2.yaml.
- Re-deploy the file2.yaml again.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file2.yaml
deployment.apps/hello-world2 configured
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                           READY   STATUS             RESTARTS         AGE
default       pod/hello-world2-65cd7875c-6z8sd               0/1     CrashLoopBackOff   9 (53s ago)      14m
default       pod/hello-world2-7759968cfc-dgv25              0/1     Running            0                9s
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running            11 (108m ago)    27d
kube-system   pod/calico-node-4d9fl                          1/1     Running            8 (106m ago)     26d
kube-system   pod/calico-node-4s9pj                          1/1     Running            9 (104m ago)     26d
kube-system   pod/calico-node-knscf                          1/1     Running            11 (108m ago)    27d
kube-system   pod/calico-node-sklsr                          1/1     Running            8 (103m ago)     26d
kube-system   pod/coredns-76f75df574-sxk6w                   1/1     Running            11 (108m ago)    27d
kube-system   pod/coredns-76f75df574-vsv9g                   1/1     Running            11 (108m ago)    27d
kube-system   pod/etcd-my-ubuntu-1                           1/1     Running            11 (108m ago)    27d
kube-system   pod/kube-apiserver-my-ubuntu-1                 1/1     Running            11 (108m ago)    27d
kube-system   pod/kube-controller-manager-my-ubuntu-1        1/1     Running            17 (108m ago)    27d
kube-system   pod/kube-proxy-7trb7                           1/1     Running            8 (106m ago)     26d
kube-system   pod/kube-proxy-cjlg2                           1/1     Running            9 (104m ago)     26d
kube-system   pod/kube-proxy-gpwgl                           1/1     Running            11 (108m ago)    27d
kube-system   pod/kube-proxy-t7fb9                           1/1     Running            8 (103m ago)     26d
kube-system   pod/kube-scheduler-my-ubuntu-1                 1/1     Running            17 (108m ago)    27d
kube-system   pod/metrics-server-84989b68d9-w9cvb            1/1     Running            0                22h

NAMESPACE     NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP                  27d
kube-system   service/kube-dns         ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server   ClusterIP   10.98.119.0     <none>        443/TCP                  2d15h

NAMESPACE     NAME                         DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node   4         4         4       4            4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy    4         4         4       4            4           kubernetes.io/os=linux   27d

NAMESPACE     NAME                                      READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2              0/1     1            0           14m
kube-system   deployment.apps/calico-kube-controllers   1/1     1            1           27d
kube-system   deployment.apps/coredns                   2/2     2            2           27d
kube-system   deployment.apps/metrics-server            1/1     1            1           2d15h

NAMESPACE     NAME                                                 DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world2-65cd7875c               1         1         0       14m
default       replicaset.apps/hello-world2-7759968cfc              1         1         0       9s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c   1         1         1       27d
kube-system   replicaset.apps/coredns-76f75df574                   2         2         2       27d
kube-system   replicaset.apps/metrics-server-84989b68d9            1         1         1       2d15h
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                           READY   STATUS    RESTARTS         AGE
default       pod/hello-world2-7759968cfc-dgv25              1/1     Running   0                22s
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running   11 (108m ago)    27d
kube-system   pod/calico-node-4d9fl                          1/1     Running   8 (106m ago)     26d
kube-system   pod/calico-node-4s9pj                          1/1     Running   9 (105m ago)     26d
kube-system   pod/calico-node-knscf                          1/1     Running   11 (108m ago)    27d
kube-system   pod/calico-node-sklsr                          1/1     Running   8 (103m ago)     26d
kube-system   pod/coredns-76f75df574-sxk6w                   1/1     Running   11 (108m ago)    27d
kube-system   pod/coredns-76f75df574-vsv9g                   1/1     Running   11 (108m ago)    27d
kube-system   pod/etcd-my-ubuntu-1                           1/1     Running   11 (108m ago)    27d
kube-system   pod/kube-apiserver-my-ubuntu-1                 1/1     Running   11 (108m ago)    27d
kube-system   pod/kube-controller-manager-my-ubuntu-1        1/1     Running   17 (108m ago)    27d
kube-system   pod/kube-proxy-7trb7                           1/1     Running   8 (106m ago)     26d
kube-system   pod/kube-proxy-cjlg2                           1/1     Running   9 (105m ago)     26d
kube-system   pod/kube-proxy-gpwgl                           1/1     Running   11 (108m ago)    27d
kube-system   pod/kube-proxy-t7fb9                           1/1     Running   8 (103m ago)     26d
kube-system   pod/kube-scheduler-my-ubuntu-1                 1/1     Running   17 (108m ago)    27d
kube-system   pod/metrics-server-84989b68d9-w9cvb            1/1     Running   0                22h

NAMESPACE     NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP                  27d
kube-system   service/kube-dns         ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server   ClusterIP   10.98.119.0     <none>        443/TCP                  2d15h

NAMESPACE     NAME                         DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node   4         4         4       4            4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy    4         4         4       4            4           kubernetes.io/os=linux   27d

NAMESPACE     NAME                                      READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2              1/1     1            1           14m
kube-system   deployment.apps/calico-kube-controllers   1/1     1            1           27d
kube-system   deployment.apps/coredns                   2/2     2            2           27d
kube-system   deployment.apps/metrics-server            1/1     1            1           2d15h
```

#3 implement it in your lab to ensure the pods and containers stay up and healthy.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

- Here we can see pods and containers stay up and healthy.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                           READY   STATUS    RESTARTS        AGE
default       pod/hello-world2-7759968cfc-dgv25              1/1     Running   0               11m
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running   11 (119m ago)   27d
kube-system   pod/calico-node-4d9fl                          1/1     Running   8 (117m ago)    26d
kube-system   pod/calico-node-4s9pj                          1/1     Running   9 (116m ago)    26d
kube-system   pod/calico-node-knscf                          1/1     Running   11 (119m ago)   27d
kube-system   pod/calico-node-sklsr                          1/1     Running   8 (114m ago)    26d
kube-system   pod/coredns-76f75df574-sxk6w                   1/1     Running   11 (119m ago)   27d
kube-system   pod/coredns-76f75df574-vsv9g                   1/1     Running   11 (119m ago)   27d
kube-system   pod/etcd-my-ubuntu-1                           1/1     Running   11 (119m ago)   27d
kube-system   pod/kube-apiserver-my-ubuntu-1                 1/1     Running   11 (119m ago)   27d
kube-system   pod/kube-controller-manager-my-ubuntu-1        1/1     Running   17 (119m ago)   27d
kube-system   pod/kube-proxy-7trb7                           1/1     Running   8 (117m ago)    26d
kube-system   pod/kube-proxy-cjlg2                           1/1     Running   9 (116m ago)    26d
kube-system   pod/kube-proxy-gpwgl                           1/1     Running   11 (119m ago)   27d
kube-system   pod/kube-proxy-t7fb9                           1/1     Running   8 (114m ago)    26d
kube-system   pod/kube-scheduler-my-ubuntu-1                 1/1     Running   17 (119m ago)   27d
kube-system   pod/metrics-server-84989b68d9-w9cvb            1/1     Running   0               22h

NAMESPACE     NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP                  27d
kube-system   service/kube-dns         ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server   ClusterIP   10.98.119.0     <none>        443/TCP                  2d16h

NAMESPACE     NAME                        DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node  4         4         4       4            4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy   4         4         4       4            4           kubernetes.io/os=linux   27d

NAMESPACE     NAME                                    READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2            1/1     1            1           25m
kube-system   deployment.apps/calico-kube-controllers 1/1     1            1           27d
kube-system   deployment.apps/coredns                 2/2     2            2           27d
kube-system   deployment.apps/metrics-server          1/1     1            1           2d16h

NAMESPACE     NAME                                              DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world2-65cd7875c            0         0         0       25m
default       replicaset.apps/hello-world2-7759968cfc           1         1         1       11m
kube-system   replicaset.apps/calico-kube-controllers-57758d645c 1        1         1       27d
kube-system   replicaset.apps/coredns-76f75df574                2         2         2       27d
kube-system   replicaset.apps/metrics-server-84989b68d9         1         1         1       2d16h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

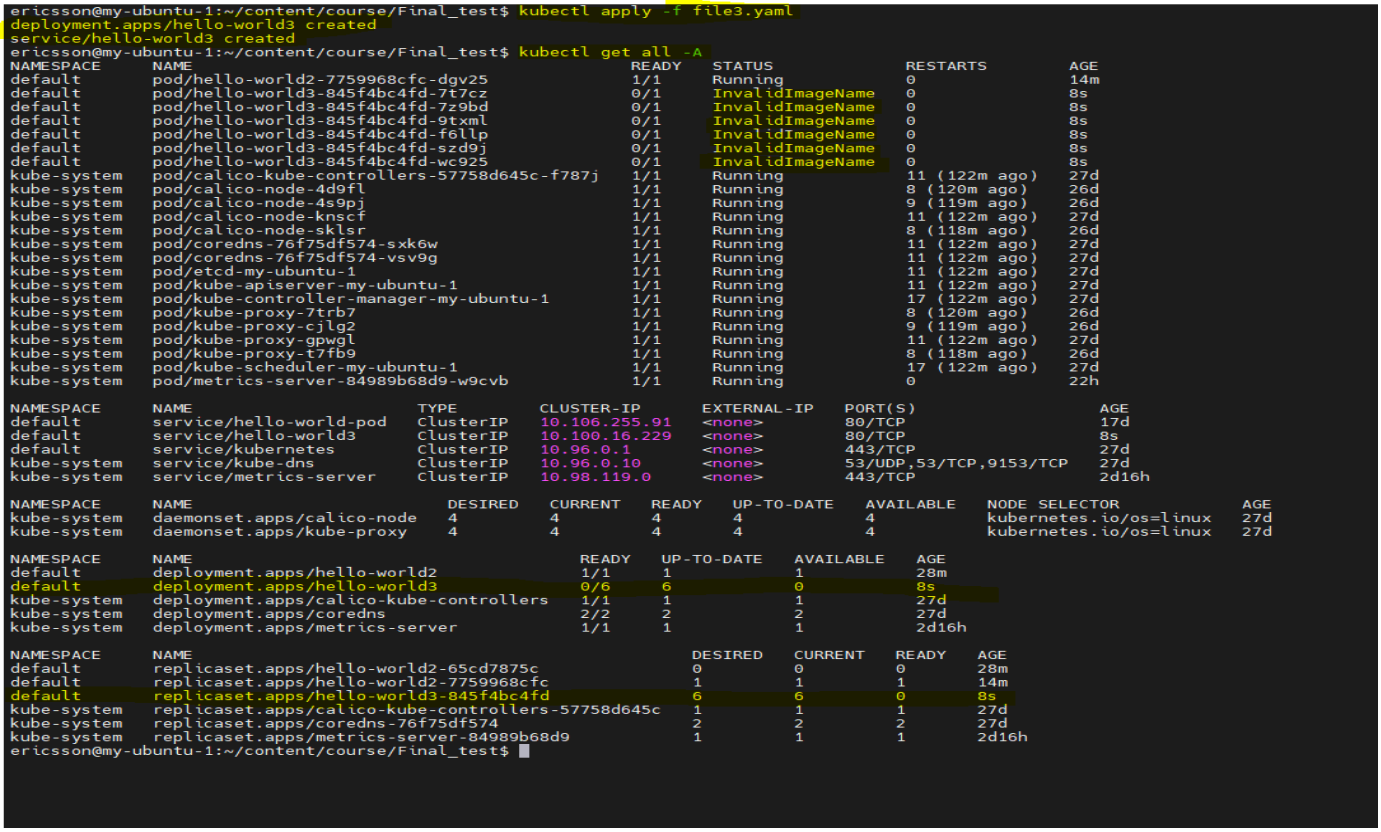
2.3 Question 3

Apply file3.yaml in your Nocentino lab. The end goal of this file is to utilize the version 2.0 of the Hello-World image from Google. Explain #1 what are the issues you see, and #2 what solutions you would propose to the customer and #3 implement it in your lab to ensure the resources come up and stay healthy.

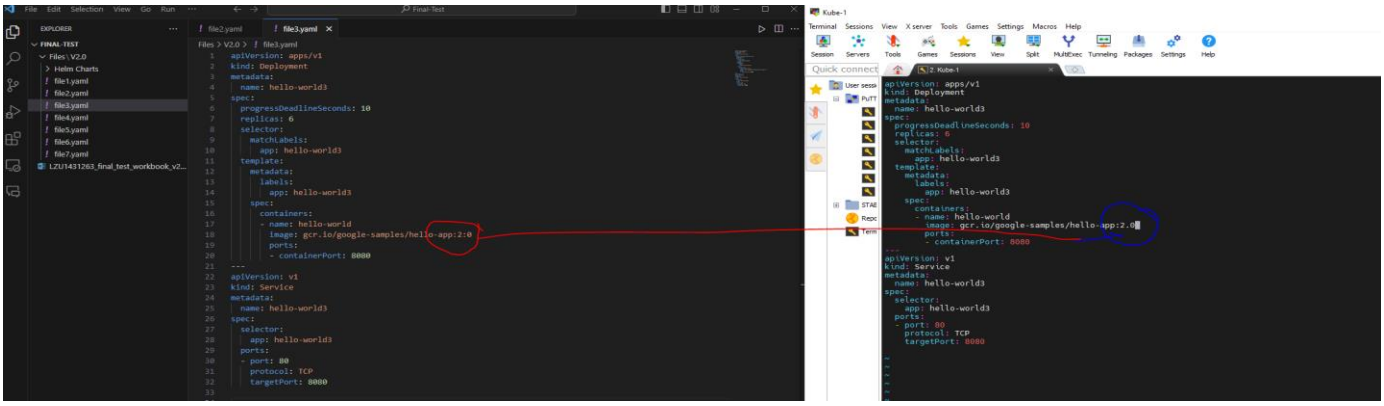
Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#1 what are the issues you see

- After deploying the file3.yaml file I found InvalidImageName.



- Reason: In file3.yaml file image written in wrong format (hello-app:2:0)



#2 what solutions you would propose to the customer:

- Solution is need to modify the file3.yaml with formatted (with dot) image (hello-app:2.0)
- Re-deploy the file again.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file3.yaml
deployment.apps/hello-world3 unchanged
service/hello-world3 unchanged
```

#3 implement it in your lab to ensure the resources come up and stay healthy.

- Below screen short shown resources come up and stay healthy.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file3.yaml
deployment.apps/hello-world3 unchanged
service/hello-world3 unchanged
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                                READY   STATUS        RESTARTS        AGE
default       pod/hello-world2-7759968cfc-dgv25                   1/1     Running       0               21m
default       pod/hello-world3-5d745ccc5d-cj7xf                   1/1     Running       0               22s
default       pod/hello-world3-5d745ccc5d-gc7gh                   1/1     Running       0               12s
default       pod/hello-world3-5d745ccc5d-gcpxq                   1/1     Running       0               14s
default       pod/hello-world3-5d745ccc5d-kbs5z                   1/1     Running       0               20s
default       pod/hello-world3-5d745ccc5d-v82zj                   1/1     Running       0               10s
default       pod/hello-world3-5d745ccc5d-wdx4p                   1/1     Running       0               22s
default       pod/hello-world3-845f4bc4fd-7z9bd                   0/1     Terminating   0               7m27s
default       pod/hello-world3-845f4bc4fd-9txml                   0/1     Terminating   0               7m27s
kube-system   pod/calico-kube-controllers-57758d645c-f787j        1/1     Running       11 (129m ago)   27d
kube-system   pod/calico-node-4d9fl                               1/1     Running       8 (127m ago)    26d
kube-system   pod/calico-node-4s9pj                               1/1     Running       9 (126m ago)    26d
kube-system   pod/calico-node-knscf                               1/1     Running       11 (129m ago)   27d
kube-system   pod/calico-node-sklsr                               1/1     Running       8 (125m ago)    26d
kube-system   pod/coredns-76f75df574-sxk6w                        1/1     Running       11 (129m ago)   27d
kube-system   pod/coredns-76f75df574-vsv9g                        1/1     Running       11 (129m ago)   27d
kube-system   pod/etcd-my-ubuntu-1                                1/1     Running       11 (129m ago)   27d
kube-system   pod/kube-apiserver-my-ubuntu-1                      1/1     Running       11 (129m ago)   27d
kube-system   pod/kube-controller-manager-my-ubuntu-1             1/1     Running       17 (129m ago)   27d
kube-system   pod/kube-proxy-7trb7                                1/1     Running       8 (127m ago)    26d
kube-system   pod/kube-proxy-cjlg2                                1/1     Running       9 (126m ago)    26d
kube-system   pod/kube-proxy-gpwgl                                1/1     Running       11 (129m ago)   27d
kube-system   pod/kube-proxy-t7fb9                                1/1     Running       8 (125m ago)    26d
kube-system   pod/kube-scheduler-my-ubuntu-1                      1/1     Running       17 (129m ago)   27d
kube-system   pod/metrics-server-84989b68d9-w9cvb                 1/1     Running       0               22h

NAMESPACE     NAME                         TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod      ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/hello-world3         ClusterIP   10.100.16.229   <none>        80/TCP                   7m27s
default       service/kubernetes           ClusterIP   10.96.0.1       <none>        443/TCP                  27d
kube-system   service/kube-dns             ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server       ClusterIP   10.98.119.0     <none>        443/TCP                  2d16h

NAMESPACE     NAME                             DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node       4         4         4       4            4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy        4         4         4       4            4           kubernetes.io/os=linux   27d

NAMESPACE     NAME                                      READY   UP-TO-DATE   AVAILABLE   AGE
default       deployment.apps/hello-world2              1/1     1            1           36m
default       deployment.apps/hello-world3              6/6     6            6           7m28s
kube-system   deployment.apps/calico-kube-controllers   1/1     1            1           27d
kube-system   deployment.apps/coredns                   2/2     2            2           27d
kube-system   deployment.apps/metrics-server            1/1     1            1           2d16h

NAMESPACE     NAME                                                DESIRED   CURRENT   READY   AGE
default       replicaset.apps/hello-world2-65cd7875c              0         0         0       36m
default       replicaset.apps/hello-world2-7759968cfc             1         1         1       21m
default       replicaset.apps/hello-world3-5d745ccc5d             6         6         6       23s
default       replicaset.apps/hello-world3-845f4bc4fd             0         0         0       7m28s
kube-system   replicaset.apps/calico-kube-controllers-57758d645c  1         1         1       27d
kube-system   replicaset.apps/coredns-76f75df574                  2         2         2       27d
kube-system   replicaset.apps/metrics-server-84989b68d9           1         1         1       2d16h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

2.4 Question 4

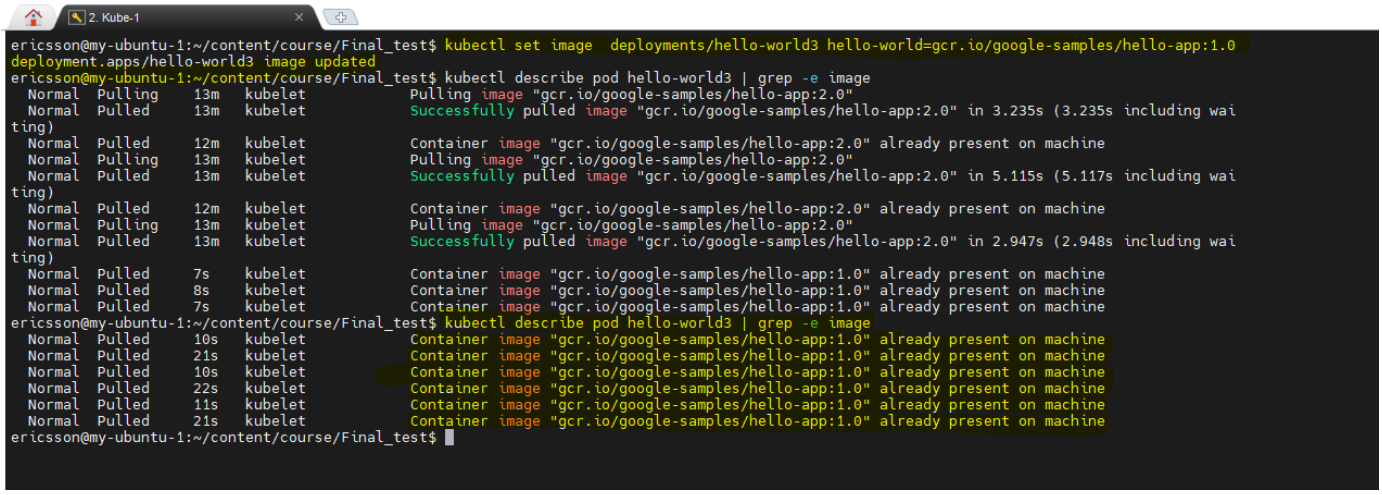
Using kubectl commands only (imperatively), downgrade the deployment used in previous question to the version 1.0 from the same Google repository. Provide the command used and a text output or screen capture showing the successful downgrade of the image.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

- Here is the current version.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe pod hello-world3 | grep -e image
  Normal  Pulling    11m   kubelet            Pulling image "gcr.io/google-samples/hello-app:2.0"
  Normal  Pulled     11m   kubelet            Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 3.235s (3.235s including waiting)
  Normal  Pulled     11m   kubelet            Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
  Normal  Pulled     11m   kubelet            Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
  Normal  Pulling    11m   kubelet            Pulling image "gcr.io/google-samples/hello-app:2.0"
  Normal  Pulled     11m   kubelet            Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 5.115s (5.117s including waiting)
  Normal  Pulled     11m   kubelet            Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
  Normal  Pulling    11m   kubelet            Pulling image "gcr.io/google-samples/hello-app:2.0"
  Normal  Pulled     11m   kubelet            Successfully pulled image "gcr.io/google-samples/hello-app:2.0" in 2.947s (2.948s including waiting)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

- In this screen capture including commands, imperatively successfully downgrade of the image.



2.5 Question 5

Apply file4.yaml in your Nocentino lab. The end goal of this file is to deploy the Hello-World image in the specified namespace found in the yaml file. Explain #1 what are the issues that you see, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up and stay healthy in the correct namespace. #4 Ensure you show all the namespaces in your answers and provide the output of 'kubectl get all -A'

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

#1 what are the issues that you see

- Here file4.yaml is deployed.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file4.yaml
namespace/batch1 created
deployment.apps/hello-world4 created
```

- Here no resources finding under the batch1 namespace.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -n batch1
No resources found in batch1 namespace.
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get namespaces
NAME              STATUS   AGE
batch1            Active   8m42s
default           Active   27d
kube-node-lease   Active   27d
kube-public       Active   27d
kube-system       Active   27d
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all
NAME                                 READY   STATUS    RESTARTS   AGE
pod/hello-world2-7759968cfc-dgv25    1/1     Running   0          48m
pod/hello-world3-7d79c8647c-cpmsn    1/1     Running   0          13m
pod/hello-world3-7d79c8647c-d7qsj    1/1     Running   0          13m
pod/hello-world3-7d79c8647c-fjfmx    1/1     Running   0          13m
pod/hello-world3-7d79c8647c-lqkw2    1/1     Running   0          13m
pod/hello-world3-7d79c8647c-wzl5g    1/1     Running   0          13m
pod/hello-world3-7d79c8647c-zlnt2    1/1     Running   0          13m
pod/hello-world4-6b8888db78-hxg5l    1/1     Running   0          5m1s
pod/hello-world4-6b8888db78-qvw2m    1/1     Running   0          5m1s
pod/hello-world4-6b8888db78-s9lm6    1/1     Running   0          5m1s
pod/hello-world4-6b8888db78-td76q    1/1     Running   0          5m1s

NAME                       TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)   AGE
service/hello-world-pod    ClusterIP   10.106.255.91    <none>        80/TCP    17d
service/hello-world3       ClusterIP   10.100.16.229    <none>        80/TCP    33m
service/kubernetes         ClusterIP   10.96.0.1        <none>        443/TCP   27d

NAME                              READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-world2      1/1     1            1           62m
deployment.apps/hello-world3      6/6     6            6           33m
deployment.apps/hello-world4      4/4     4            4           5m1s

NAME                                         DESIRED   CURRENT   READY   AGE
replicaset.apps/hello-world2-65cd7875c       0         0         0       62m
replicaset.apps/hello-world2-7759968cfc      1         1         1       48m
replicaset.apps/hello-world3-5d745ccc5d      0         0         0       26m
replicaset.apps/hello-world3-7d79c8647c      6         6         6       13m
replicaset.apps/hello-world3-845f4bc4fd      0         0         0       33m
replicaset.apps/hello-world4-6b8888db78      4         4         4       5m1s
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

#2 what solution you would propose to the customer

- It was only created under default namespace.
- Here need apply the file4.yaml file "-n batch" the resource will move to the batch1 namespace.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file4.yaml -n batch1
namespace/batch1 unchanged
```

#3 implement it in your lab to ensure the resources come up and stay healthy in the correct namespace.

- Resources come up and stay healthy in the correct namespace.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -n batch1
NAME                                 READY   STATUS    RESTARTS   AGE
pod/hello-world4-6b8888db78-45hzl    1/1     Running   0          3m53s
pod/hello-world4-6b8888db78-dhgrj    1/1     Running   0          3m53s
pod/hello-world4-6b8888db78-dtn46    1/1     Running   0          3m53s
pod/hello-world4-6b8888db78-zlsvt    1/1     Running   0          3m53s

NAME                              READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-world4      4/4     4            4           3m53s

NAME                                         DESIRED   CURRENT   READY   AGE
replicaset.apps/hello-world4-6b8888db78      4         4         4       3m53s
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

#4 Ensure you show all the namespaces in your answers and provide the output of 'kubectl get all -A'

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all -A
NAMESPACE     NAME                                           READY   STATUS    RESTARTS        AGE
batch1        pod/hello-world4-6b8888db78-45hzl              1/1     Running   0               6m18s
batch1        pod/hello-world4-6b8888db78-dhgrj              1/1     Running   0               6m18s
batch1        pod/hello-world4-6b8888db78-dtn46              1/1     Running   0               6m18s
batch1        pod/hello-world4-6b8888db78-zlsvt              1/1     Running   0               6m18s
default       pod/hello-world2-7759968cfc-dgv25              1/1     Running   0               60m
default       pod/hello-world3-7d79c8647c-cpmsn              1/1     Running   0               25m
default       pod/hello-world3-7d79c8647c-d7qsj              1/1     Running   0               25m
default       pod/hello-world3-7d79c8647c-fjfmx              1/1     Running   0               25m
default       pod/hello-world3-7d79c8647c-lqkw2              1/1     Running   0               25m
default       pod/hello-world3-7d79c8647c-wzl5g              1/1     Running   0               25m
default       pod/hello-world3-7d79c8647c-zlnt2              1/1     Running   0               25m
default       pod/hello-world4-6b8888db78-hxg5l              1/1     Running   0               16m
default       pod/hello-world4-6b8888db78-qvw2m              1/1     Running   0               16m
default       pod/hello-world4-6b8888db78-s9lm6              1/1     Running   0               16m
default       pod/hello-world4-6b8888db78-td76q              1/1     Running   0               16m
kube-system   pod/calico-kube-controllers-57758d645c-f787j   1/1     Running   11 (168m ago)   27d
kube-system   pod/calico-node-4d9fl                          1/1     Running   8 (166m ago)    27d
kube-system   pod/calico-node-4s9pj                          1/1     Running   9 (164m ago)    27d
kube-system   pod/calico-node-knscf                          1/1     Running   11 (168m ago)   27d
kube-system   pod/calico-node-sklsr                          1/1     Running   8 (163m ago)    27d
kube-system   pod/coredns-76f75df574-sxk6w                   1/1     Running   11 (168m ago)   27d
kube-system   pod/coredns-76f75df574-vsv9g                   1/1     Running   11 (168m ago)   27d
kube-system   pod/etcd-my-ubuntu-1                           1/1     Running   11 (168m ago)   27d
kube-system   pod/kube-apiserver-my-ubuntu-1                 1/1     Running   11 (168m ago)   27d
kube-system   pod/kube-controller-manager-my-ubuntu-1        1/1     Running   17 (168m ago)   27d
kube-system   pod/kube-proxy-7trb7                           1/1     Running   8 (166m ago)    27d
kube-system   pod/kube-proxy-cjlg2                           1/1     Running   9 (164m ago)    27d
kube-system   pod/kube-proxy-gpwgl                           1/1     Running   11 (168m ago)   27d
kube-system   pod/kube-proxy-t7fb9                           1/1     Running   8 (163m ago)    27d
kube-system   pod/kube-scheduler-my-ubuntu-1                 1/1     Running   17 (168m ago)   27d
kube-system   pod/metrics-server-84989b68d9-w9cvb            1/1     Running   0               23h

NAMESPACE     NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)                  AGE
default       service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP                   17d
default       service/hello-world3     ClusterIP   10.100.16.229   <none>        80/TCP                   45m
default       service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP                  27d
kube-system   service/kube-dns         ClusterIP   10.96.0.10      <none>        53/UDP,53/TCP,9153/TCP   27d
kube-system   service/metrics-server   ClusterIP   10.98.119.0     <none>        443/TCP                  2d16h

NAMESPACE     NAME                         DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR            AGE
kube-system   daemonset.apps/calico-node   4         4         4       4            4           kubernetes.io/os=linux   27d
kube-system   daemonset.apps/kube-proxy    4         4         4       4            4           kubernetes.io/os=linux   27d

NAMESPACE     NAME                                      READY   UP-TO-DATE   AVAILABLE   AGE
batch1        deployment.apps/hello-world4              4/4     4            4           6m19s
default       deployment.apps/hello-world2              1/1     1            1           74m
default       deployment.apps/hello-world3              6/6     6            6           45m
default       deployment.apps/hello-world4              4/4     4            4           16m
kube-system   deployment.apps/calico-kube-controllers   1/1     1            1           27d
kube-system   deployment.apps/coredns                   2/2     2            2           27d
kube-system   deployment.apps/metrics-server            1/1     1            1           2d16h

NAMESPACE     NAME                                                 DESIRED   CURRENT   READY   AGE
batch1        replicaset.apps/hello-world4-6b8888db78              4         4         4       6m19s
default       replicaset.apps/hello-world2-65cd7875c               0         0         0       74m
default       replicaset.apps/hello-world2-7759968cfc              1         1         1       60m
default       replicaset.apps/hello-world3-5d745ccc5d              0         0         0       38m
default       replicaset.apps/hello-world3-7d79c8647c              6         6         6       25m
default       replicaset.apps/hello-world3-845f4bc4fd              0         0         0       45m
default       replicaset.apps/hello-world4-6b8888db78              4         4         4       16m
kube-system   replicaset.apps/calico-kube-controllers-57758d645c   1         1         1       27d
kube-system   replicaset.apps/coredns-76f75df574                   2         2         2       27d
kube-system   replicaset.apps/metrics-server-84989b68d9            1         1         1       2d16h
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

2.6 Question 6

Apply file5.yaml in your Nocentino lab. The end goal of this file is to deploy the Hello-World image on one specific node. Explain #1 what are the issues you see, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up on one node in your lab. NOTE: if you find a solution that allows you to decide which node you will deploy the file, ensure that not everyone in your team will chose the same node. That will require collaboration and coordination.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

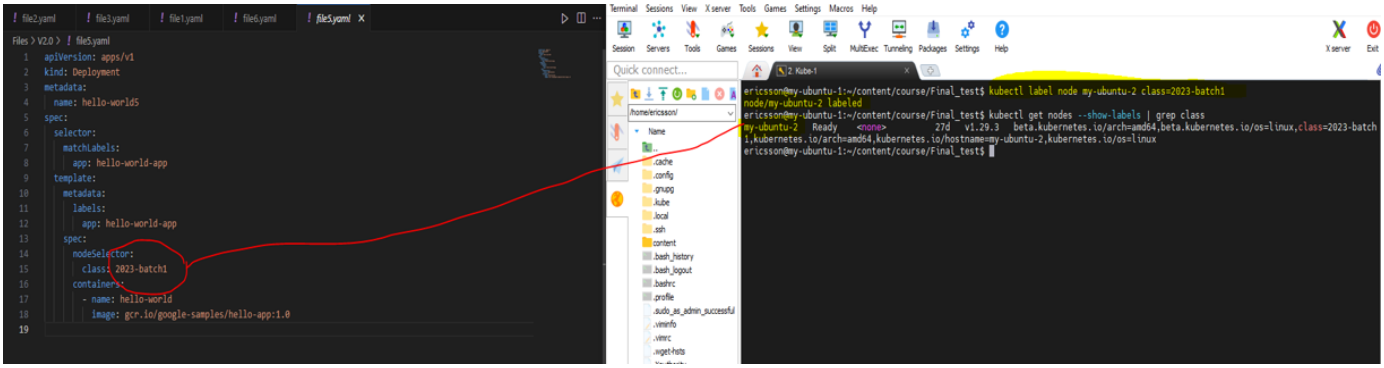
#1: what are the issues you see

- Here I observed pod is under pending state!

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file5.yaml
deployment.apps/hello-world5 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods -o wide
NAME                           READY   STATUS    RESTARTS   AGE    IP               NODE          NOMINATED NODE   READINESS GA
TES
hello-world2-7759968cfc-dgv25  1/1     Running   0          3h3m   192.168.247.159  my-ubuntu-4   <none>           <none>
hello-world3-7d79c8647c-cpmsn  1/1     Running   0          148m   192.168.160.196  my-ubuntu-2   <none>           <none>
hello-world3-7d79c8647c-d7qsj  1/1     Running   0          148m   192.168.150.28   my-ubuntu-3   <none>           <none>
hello-world3-7d79c8647c-fjfmx  1/1     Running   0          148m   192.168.247.164  my-ubuntu-4   <none>           <none>
hello-world3-7d79c8647c-lqkw2  1/1     Running   0          148m   192.168.160.214  my-ubuntu-2   <none>           <none>
hello-world3-7d79c8647c-wzl5g  1/1     Running   0          148m   192.168.150.30   my-ubuntu-3   <none>           <none>
hello-world3-7d79c8647c-zlnt2  1/1     Running   0          148m   192.168.247.165  my-ubuntu-4   <none>           <none>
hello-world4-6b8888db78-hxg5l  1/1     Running   0          140m   192.168.247.163  my-ubuntu-4   <none>           <none>
hello-world4-6b8888db78-qvw2m  1/1     Running   0          140m   192.168.160.204  my-ubuntu-2   <none>           <none>
hello-world4-6b8888db78-s9lm6  1/1     Running   0          140m   192.168.150.32   my-ubuntu-3   <none>           <none>
hello-world4-6b8888db78-td76q  1/1     Running   0          140m   192.168.150.31   my-ubuntu-3   <none>           <none>
hello-world5-76fddcbc79-t5gg6  0/1     Pending   0          13s    <none>           <none>        <none>           <none>
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods -o wide
NAME                           READY   STATUS    RESTARTS   AGE    IP               NODE          NOMINATED NODE   READINESS GA
TES
hello-world2-7759968cfc-dgv25  1/1     Running   0          3h3m   192.168.247.159  my-ubuntu-4   <none>           <none>
hello-world3-7d79c8647c-cpmsn  1/1     Running   0          149m   192.168.160.196  my-ubuntu-2   <none>           <none>
hello-world3-7d79c8647c-d7qsj  1/1     Running   0          149m   192.168.150.28   my-ubuntu-3   <none>           <none>
hello-world3-7d79c8647c-fjfmx  1/1     Running   0          149m   192.168.247.164  my-ubuntu-4   <none>           <none>
hello-world3-7d79c8647c-lqkw2  1/1     Running   0          149m   192.168.160.214  my-ubuntu-2   <none>           <none>
hello-world3-7d79c8647c-wzl5g  1/1     Running   0          149m   192.168.150.30   my-ubuntu-3   <none>           <none>
hello-world3-7d79c8647c-zlnt2  1/1     Running   0          149m   192.168.247.165  my-ubuntu-4   <none>           <none>
hello-world4-6b8888db78-hxg5l  1/1     Running   0          140m   192.168.247.163  my-ubuntu-4   <none>           <none>
hello-world4-6b8888db78-qvw2m  1/1     Running   0          140m   192.168.160.204  my-ubuntu-2   <none>           <none>
hello-world4-6b8888db78-s9lm6  1/1     Running   0          140m   192.168.150.32   my-ubuntu-3   <none>           <none>
hello-world4-6b8888db78-td76q  1/1     Running   0          140m   192.168.150.31   my-ubuntu-3   <none>           <none>
hello-world5-76fddcbc79-t5gg6  0/1     Pending   0          48s    <none>           <none>        <none>           <none>
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

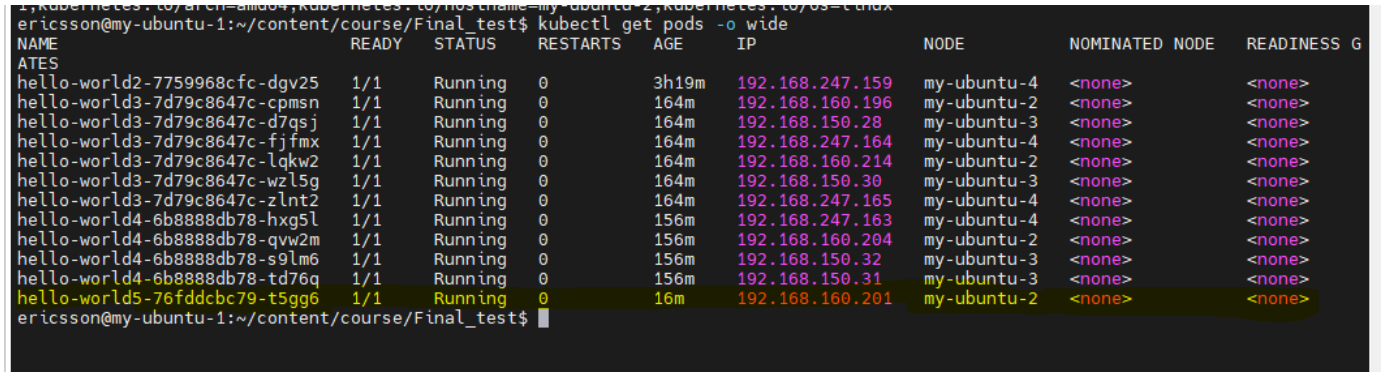
#2 what solution you would propose to the customer.

- Here the solution is proposed to the customer need label with class into the one node.
- Please check below screen short with command.
- I chose node 2 in my case it's name is my-ubuntu-2.



#3 implement it in your lab to ensure the resources come up on one node in your lab

- Here we can see on my-ubuntu-2 the resource is come up.



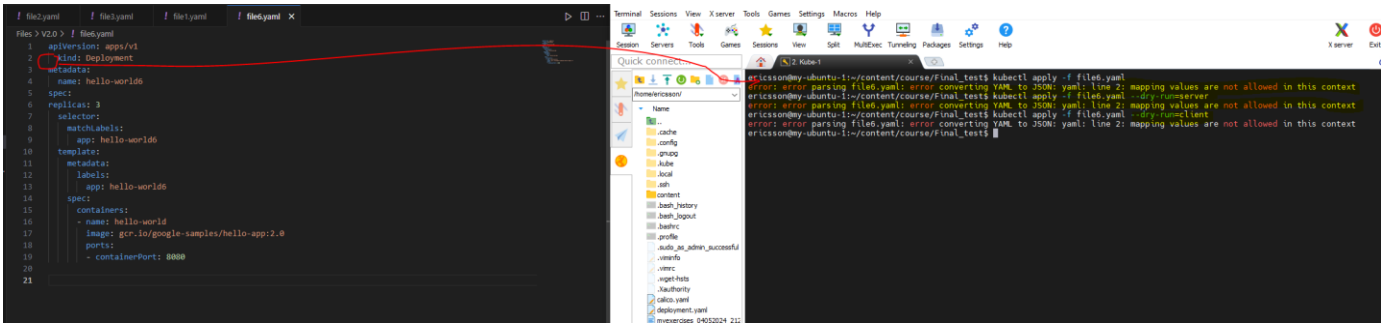
2.7 Question 7

Apply file6.yaml in your Nocentino lab. Explain #1 what are the issues you see, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up and healthy in your lab.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

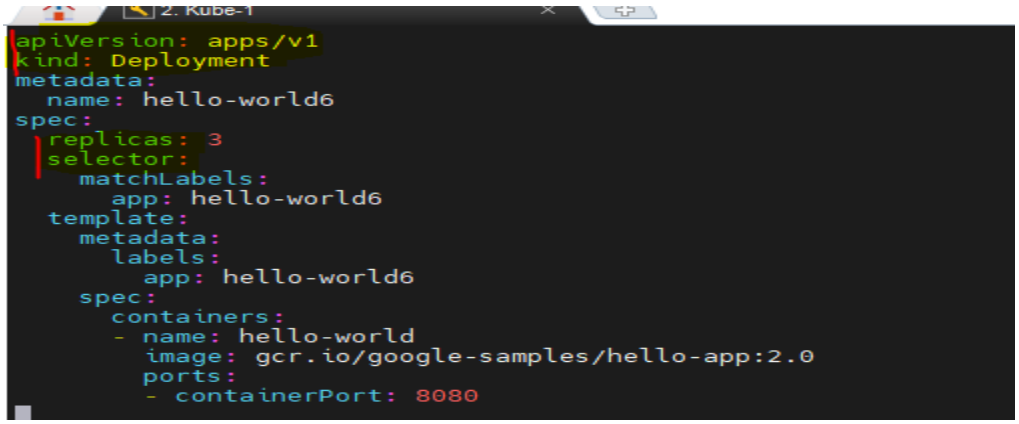
#1 what are the issues you see

- After applied the file showing the error.
- Server-side and client-side validation also showing error.



#2 what solution you would propose to the customer

- In file6.yaml, Line 1 & 2 and line 6 & 7 should be parallel.



#3 implement it in your lab to ensure the resources come up and healthy in your lab.

- Now Server-side and client-side validation looks okay.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file6.yaml --dry-run=client
deployment.apps/hello-world6 created (dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file6.yaml --dry-run=server
deployment.apps/hello-world6 created (server dry run)
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

- The resources come up and healthy check below screen short.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file6.yaml
deployment.apps/hello-world6 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get all
NAME                                 READY   STATUS    RESTARTS   AGE
pod/hello-world2-7759968cfc-dgv25    1/1     Running   0          3h33m
pod/hello-world3-7d79c8647c-cpmsn    1/1     Running   0          178m
pod/hello-world3-7d79c8647c-d7qsj    1/1     Running   0          179m
pod/hello-world3-7d79c8647c-fjfmx    1/1     Running   0          178m
pod/hello-world3-7d79c8647c-lqkw2    1/1     Running   0          179m
pod/hello-world3-7d79c8647c-wzl5g    1/1     Running   0          179m
pod/hello-world3-7d79c8647c-zlnt2    1/1     Running   0          179m
pod/hello-world4-6b8888db78-hxg5l    1/1     Running   0          170m
pod/hello-world4-6b8888db78-qvw2m    1/1     Running   0          170m
pod/hello-world4-6b8888db78-s9lm6    1/1     Running   0          170m
pod/hello-world4-6b8888db78-td76q    1/1     Running   0          170m
pod/hello-world5-76fddcbc79-t5gg6    1/1     Running   0          30m
pod/hello-world6-649c4f785f-5cvv7    1/1     Running   0          53s
pod/hello-world6-649c4f785f-c5l9n    1/1     Running   0          53s
pod/hello-world6-649c4f785f-rnrt9    1/1     Running   0          53s

NAME                     TYPE        CLUSTER-IP      EXTERNAL-IP   PORT(S)   AGE
service/hello-world-pod  ClusterIP   10.106.255.91   <none>        80/TCP    17d
service/hello-world3     ClusterIP   10.100.16.229   <none>        80/TCP    3h19m
service/kubernetes       ClusterIP   10.96.0.1       <none>        443/TCP   27d

NAME                                 READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-world2         1/1     1            1           3h47m
deployment.apps/hello-world3         6/6     6            6           3h19m
deployment.apps/hello-world4         4/4     4            4           170m
deployment.apps/hello-world5         1/1     1            1           30m
deployment.apps/hello-world6         3/3     3            3           53s

NAME                                       DESIRED   CURRENT   READY   AGE
replicaset.apps/hello-world2-65cd7875c     0         0         0       3h48m
replicaset.apps/hello-world2-7759968cfc    1         1         1       3h33m
replicaset.apps/hello-world3-5d745ccc5d    0         0         0       3h12m
replicaset.apps/hello-world3-7d79c8647c    6         6         6       179m
replicaset.apps/hello-world3-845f4bc4fd    0         0         0       3h19m
replicaset.apps/hello-world4-6b8888db78    4         4         4       170m
replicaset.apps/hello-world5-76fddcbc79    1         1         1       30m
replicaset.apps/hello-world6-649c4f785f    3         3         3       54s
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

2.8 Question 8

Apply file7.yaml in your Nocentino lab. The end goal of this file is to deploy the Hello-World pod with its associated service and allow you to curl it to receive a response. Explain #1 what are the issues you see when you curl the service ip, and #2 what solution you would propose to the customer and #3 implement it in your lab to ensure the resources come up healthy and you can successfully curl the application.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

- Applied file7.yaml

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file7.yaml
deployment.apps/hello-world-pod-file7 created
service/hello-world-service-file7 created
ericsson@my-ubuntu-1:~/content/course/Final_test$
```

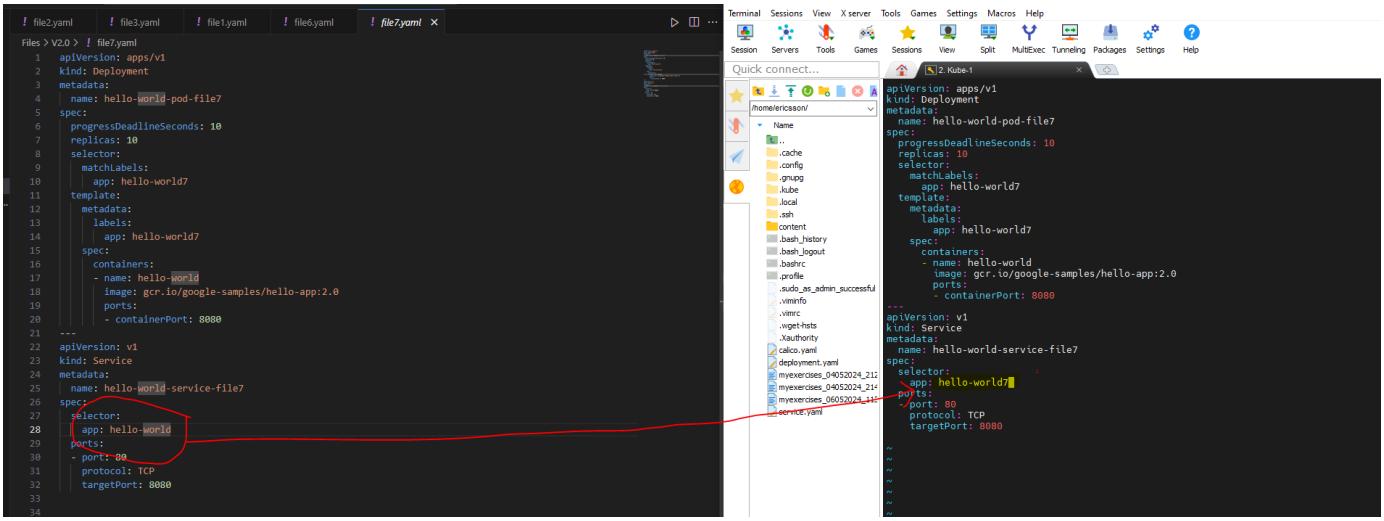
#1 what are the issues you see when you curl the service IP.

- Connection refused when I did curl command with IP.
- Because under the selector section app = hello-world in file7.yaml and labels is app=hello-world7.

```
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl apply -f file7.yaml
deployment.apps/hello-world-pod-file7 created
service/hello-world-service-file7 created
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get svc
NAME                      TYPE        CLUSTER-IP       EXTERNAL-IP   PORT(S)   AGE
hello-world-pod           ClusterIP   10.106.255.91    <none>        80/TCP    17d
hello-world-service-file7 ClusterIP   10.102.135.213   <none>        80/TCP    9m26s
hello-world3              ClusterIP   10.100.16.229    <none>        80/TCP    3h30m
kubernetes                ClusterIP   10.96.0.1        <none>        443/TCP   27d
ericsson@my-ubuntu-1:~/content/course/Final_test$ curl 10.102.135.213
curl: (7) Failed to connect to 10.102.135.213 port 80: Connection refused
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl get pods
NAME                                READY   STATUS    RESTARTS   AGE
hello-world-pod-file7-5579b48854-6g427   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-7zplz   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-9k9f5   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-b4qcp   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-gzspp   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-l8cb2   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-m7rsk   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-p2mmx   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-p4r6m   1/1     Running   0          10m
hello-world-pod-file7-5579b48854-rdhm6   1/1     Running   0          10m
hello-world2-7759968cfc-dgv25            1/1     Running   0          3h46m
hello-world3-7d79c8647c-cpmsn            1/1     Running   0          3h11m
hello-world3-7d79c8647c-d7qsj            1/1     Running   0          3h11m
hello-world3-7d79c8647c-fjfmx            1/1     Running   0          3h11m
hello-world3-7d79c8647c-lqkw2            1/1     Running   0          3h11m
hello-world3-7d79c8647c-wzl5g            1/1     Running   0          3h11m
hello-world3-7d79c8647c-zlnt2            1/1     Running   0          3h11m
hello-world4-6b8888db78-hxg5l            1/1     Running   0          3h3m
hello-world4-6b8888db78-qvw2m            1/1     Running   0          3h3m
hello-world4-6b8888db78-s9lm6            1/1     Running   0          3h3m
hello-world4-6b8888db78-td76q            1/1     Running   0          3h3m
hello-world5-76fddcbc79-t5gg6            1/1     Running   0          43m
hello-world6-649c4f785f-5cvv7            1/1     Running   0          13m
hello-world6-649c4f785f-c5l9n            1/1     Running   0          13m
hello-world6-649c4f785f-rnrt9            1/1     Running   0          13m
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe pod hello-world-pod-file7-5579b48854-6g427 | grep app
Labels:           app=hello-world7
    Image:          gcr.io/google-samples/hello-app:2.0
    Image ID:       gcr.io/google-samples/hello-app@sha256:7104356ed4e3476a96a23b96f8d7c04dfa7a1881aa97d66a76217f6bc8a370d0
  Normal  Pulled     11m   kubelet            Container image "gcr.io/google-samples/hello-app:2.0" already present on machine
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe svc hello-world-pod-file7 | grep app
Error from server (NotFound): services "hello-world-pod-file7" not found
ericsson@my-ubuntu-1:~/content/course/Final_test$ kubectl describe svc hello-world-service-file7 | grep app
Selector:         app=hello-world
```

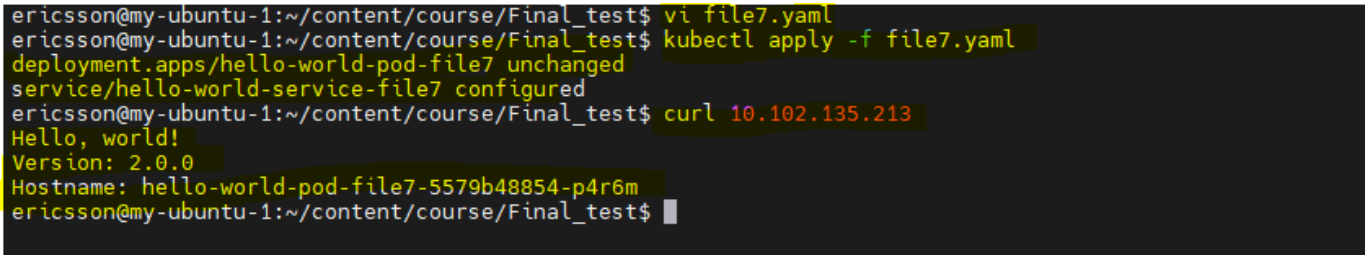
#2 what solution you would propose to the customer.

- Under the selector section app: hello-world in file7.yaml need to update with app: hello-world7.
- Then applied the file again.



#3 implement it in your lab to ensure the resources come up healthy and you can successfully curl the application.

- After the update curl with ip is worked.



Example of a successful curl response:

```
curl 10.105.217.86
```

Hello, world!

Version: 2.0.0

Hostname: hello-world7-9f95dbbdf-8w8qb

2.9 Question 9

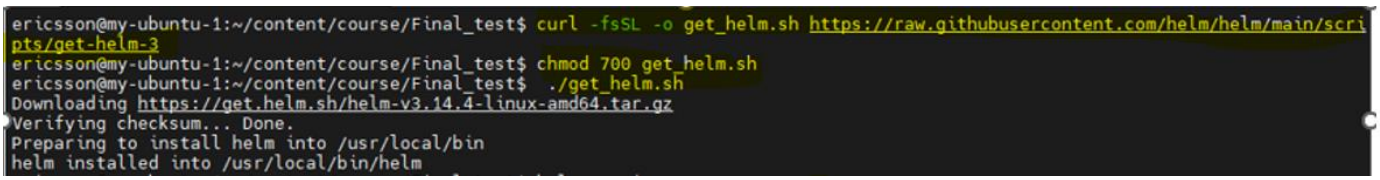
Install Helm 3 on your Nocentino lab from the Script section of the official HELM documentation (https://helm.sh/docs/intro/install/).

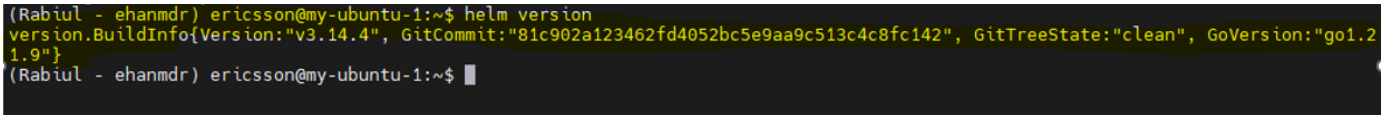
Show all the commands you used and include which version you successfully installed.

Show your work / commands used to perform these tasks, including the prompts of your personalized lab.

Example (your version could be different) : helm version

version.BuildInfo{Version:"v3.8.2", GitCommit:"50f003e5ee8704ec937a756c646870227d7c8b58", GitTreeState:"clean", GoVersion:"go1.16.8"}



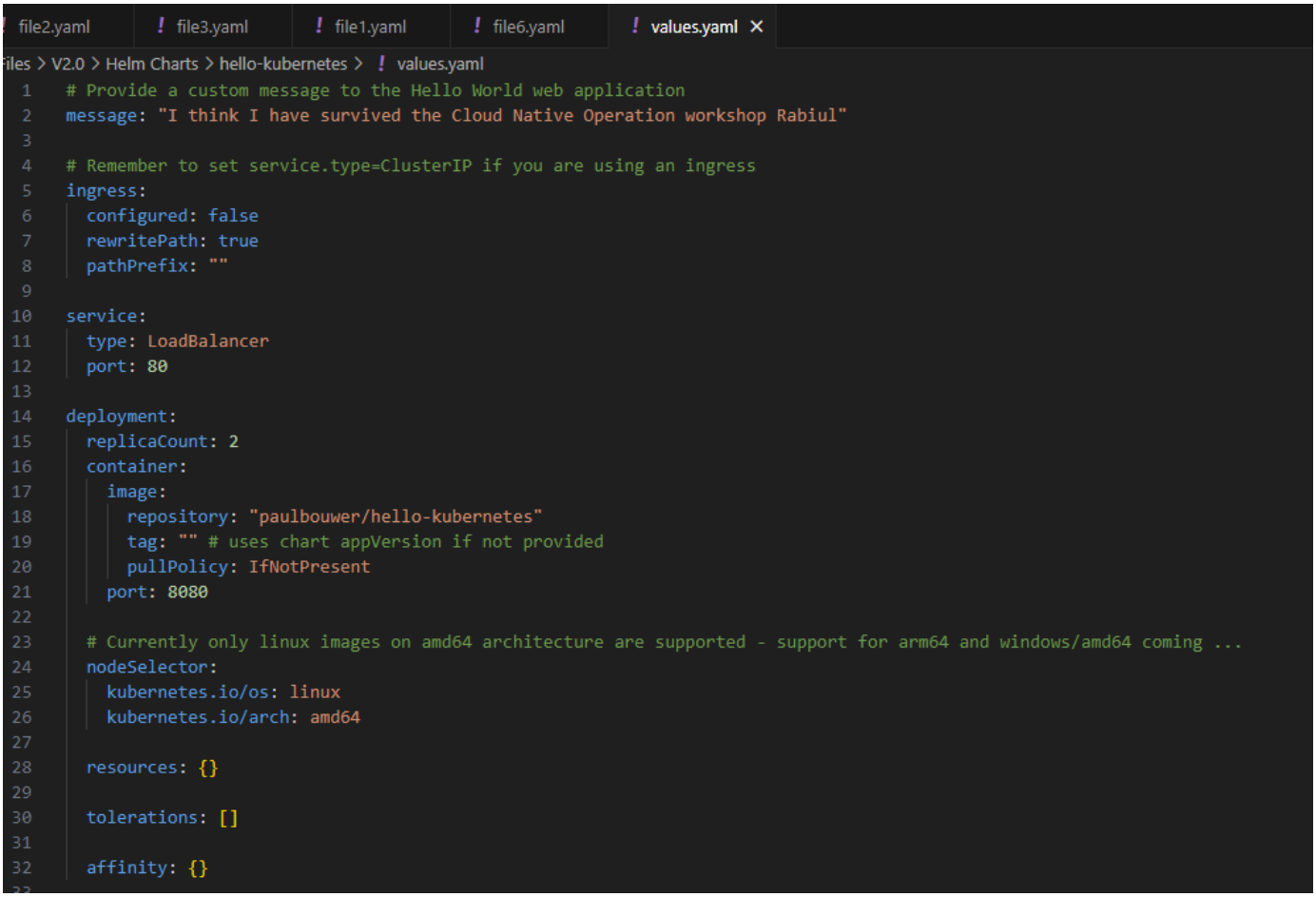


2.10 Question 10

The customer provided you a HELM Chart that will deploy an HTTP version of Hello-World.

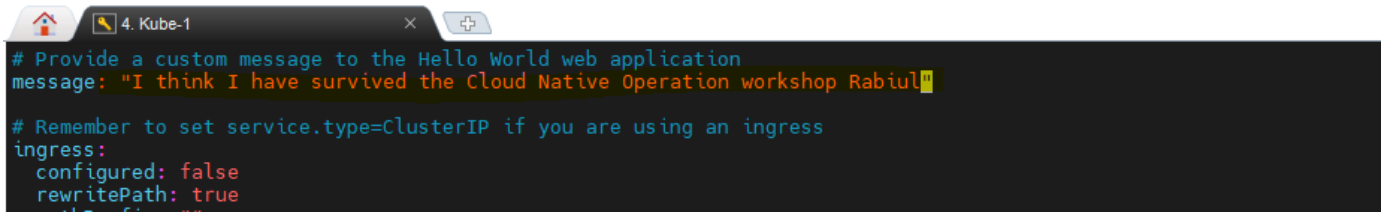
#1 Review all the value files in the Chart package to understand what variables already exists for you to reuse.

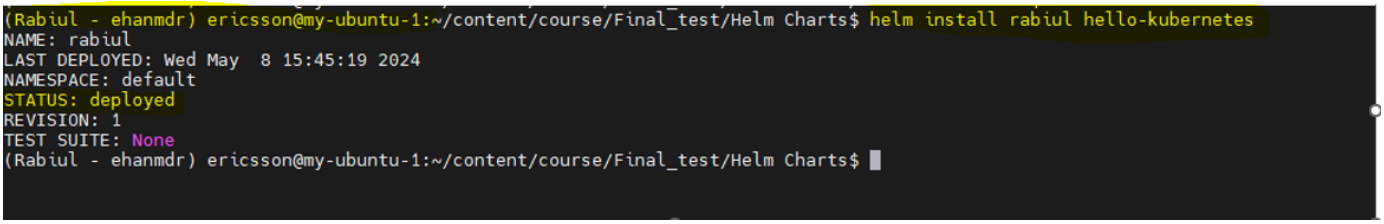
- I reviewed value.yaml (only one is there)
- We can see the below screen short has all the variables list that we can reuse in the deployment.

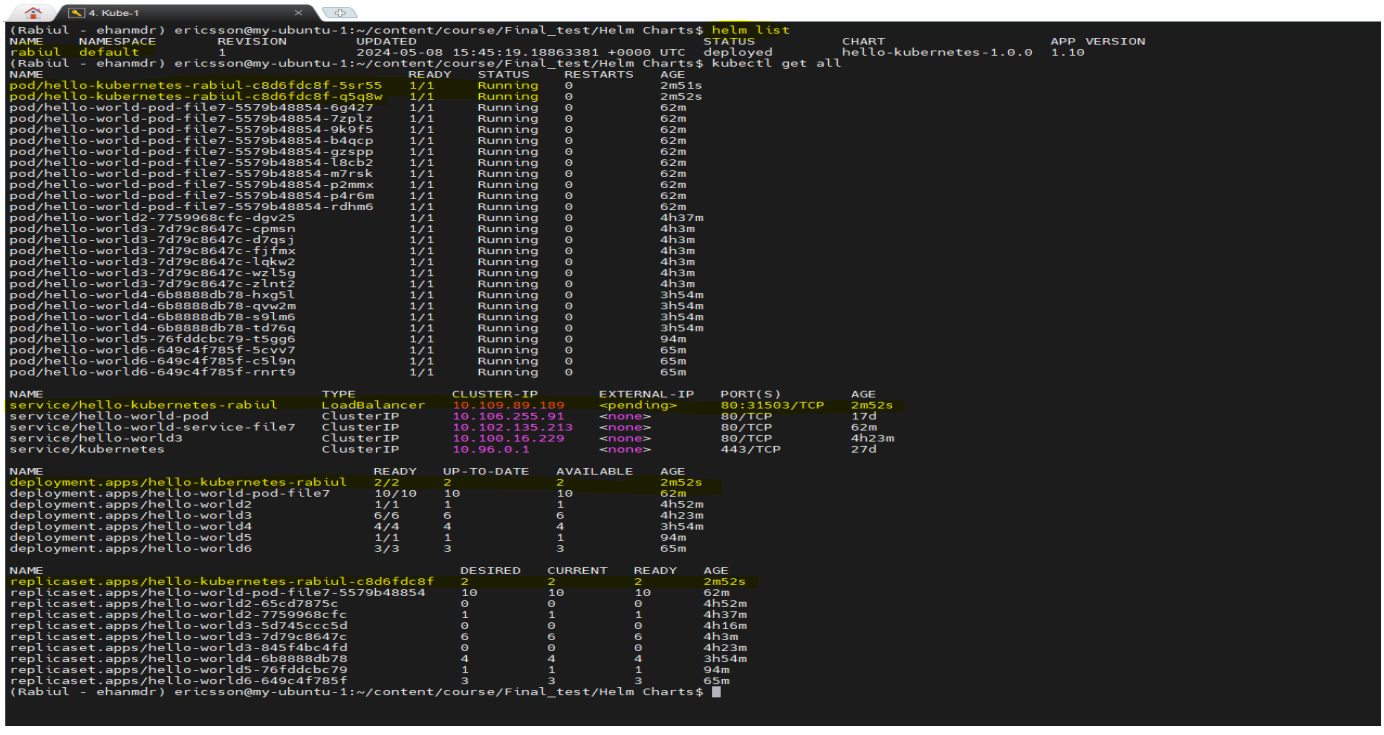


#2 Using the HELM charts, deploy the application with the message "I think I have survived the Cloud Native Operation workshop (Your first name or signum)" configured via one of the value files. Take a screen capture showing the output, including the url bar at the top and output of the command you used to deploy it.

- I have updated the message.
- Install the with my name please check below screen short.







- Here is the curl command.

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ curl 10.109.89.189
<!DOCTYPE html>
<html>
<head>
    <title>Hello Kubernetes!</title>
    <link rel="stylesheet" type="text/css" href="/css/main.css">
    <link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Ubuntu:300" >
</head>
<body>

  <div class="main">
    <img src="/images/kubernetes.png"/>
    <div class="content">
      <div id="message">
  I think I have survived the Cloud Native Operation workshop Rabiul
</div>
<div id="info">
  <table>
    <tr>
      <th>namespace:</th>
      <td>default</td>
    </tr>
    <tr>
      <th>pod:</th>
      <td>hello-kubernetes-rabiul-c8d6fdc8f-q5q8w</td>
    </tr>
    <tr>
      <th>node:</th>
      <td>my-ubuntu-4 (Linux 4.15.0-202-generic)</td>
    </tr>
  </table>
</div>
<div id="footer">
  paulbouwer/hello-kubernetes:1.10 (linux/amd64)
</div>
    </div>
  </div>

</body>
</html>(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
```

#3 Using HELM charts and command line variables, deploy the application again with a different message "I definitely survived the Cloud Native Operation workshop [today's date] (Your first name or signum)". This new message should be configured via the helm command line and if you have done it correctly, should override the message in the charts.

- Here is the different message.

```
2. Kube-1
# Provide a custom message to the Hello World web application
message: "I think I have survived the Cloud Native Operation workshop Date:2024.05.08:17:30 Rabiul"
```

- Deploy with different name.

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm install ehanmdr  hello-kubernetes
NAME: ehanmdr
LAST DEPLOYED: Wed May  8 15:54:23 2024
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
```

- After upgrade we can see revision 2.

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm upgrade ehanmdr hello-kubernetes -f hello-kubernetes/values.yaml
Release "ehanmdr" has been upgraded. Happy Helming!
NAME: ehanmdr
LAST DEPLOYED: Wed May  8 16:00:13 2024
NAMESPACE: default
STATUS: deployed
REVISION: 2
TEST SUITE: None
```

- Verifying second message

```
</html>(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ kubectl get svc
NAME                     TYPE           CLUSTER-IP       EXTERNAL-IP   PORT(S)          AGE
hello-kubernetes-ehanmdr    LoadBalancer   10.103.58.99     <pending>     80:30106/TCP     7m21s
hello-kubernetes-rabiul     LoadBalancer   10.109.89.189    <pending>     80:31503/TCP     16m
hello-world-pod             ClusterIP      10.106.255.91    <none>        80/TCP           17d
hello-world-service-file7   ClusterIP      10.102.135.213   <none>        80/TCP           75m
hello-world3                ClusterIP      10.100.16.229    <none>        80/TCP           4h37m
kubernetes                  ClusterIP      10.96.0.1        <none>        443/TCP          27d
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ curl 10.103.58.99
<!DOCTYPE html>
<html>
<head>
    <title>Hello Kubernetes!</title>
    <link rel="stylesheet" type="text/css" href="/css/main.css">
    <link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Ubuntu:300" >
</head>
<body>

  <div class="main">
    <img src="/images/kubernetes.png"/>
    <div class="content">
      <div id="message">
  I think I have survived the Cloud Native Operation workshop Date:2024.05.08:17:30 Rabiul
</div>
<div id="info">
  <table>
    <tr>
      <th>namespace:</th>
      <td>default</td>
    </tr>
    <tr>
      <th>pod:</th>
      <td>hello-kubernetes-ehanmdr-78489c5ff9-5zzbf</td>
    </tr>
    <tr>
      <th>node:</th>
      <td>my-ubuntu-2 (Linux 4.15.0-202-generic)</td>
    </tr>
  </table>
</div>
<div id="footer">
  paulbouwer/hello-kubernetes:1.10 (linux/amd64)
</div>
    </div>
  </div>

</body>
</html>(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
```

Take a screen capture showing the output, including the url bar at the top, AND the command you used to deploy it a second time.

NOTE: you can upgrade the first deployment, or deploy a new one with a different name, it's up to you to decide which one you prefer. Both are acceptable.

#4 Attach your screen captures below of your two Helm web application deployments.

Show your work / commands / screen captures used to perform these tasks, including the prompts of your personalized lab.

- Here is the one Helm web application deployment.
- First one I have deleted without understanding (self-confession)
- If you really need it, then I can do one more deployment which will be the revision 3. (Reach me)
- But you can verify from previous screen short I have truly deployed two Helm web application. (Thanks)

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ helm list
NAME    NAMESPACE       REVISION        UPDATED                                 STATUS          CHART                   APP VERSION
ehanmdr default         2               2024-05-08 16:00:13.388329728 +0000 UTC deployed        hello-kubernetes-1.0.0  1.10
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
```

```
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$ kubectl get all
NAME                                                READY   STATUS    RESTARTS   AGE
pod/hello-kubernetes-ehanmdr-78489c5ff9-5zzbf       1/1     Running   0          15m
pod/hello-kubernetes-ehanmdr-78489c5ff9-qwspg       1/1     Running   0          15m
pod/hello-world-pod-file7-5579b48854-6g427          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-7zplz          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-9k9f5          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-b4qcp          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-gzspp          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-l8cb2          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-m7rsk          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-p2mmx          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-p4r6m          1/1     Running   0          83m
pod/hello-world-pod-file7-5579b48854-rdhm6          1/1     Running   0          83m
pod/hello-world2-7759968cfc-dgv25                   1/1     Running   0          4h59m
pod/hello-world3-7d79c8647c-cpmsn                   1/1     Running   0          4h25m
pod/hello-world3-7d79c8647c-d7qsj                   1/1     Running   0          4h25m
pod/hello-world3-7d79c8647c-fjfmx                   1/1     Running   0          4h25m
pod/hello-world3-7d79c8647c-lqkw2                   1/1     Running   0          4h25m
pod/hello-world3-7d79c8647c-wzl5g                   1/1     Running   0          4h25m
pod/hello-world3-7d79c8647c-zlnt2                   1/1     Running   0          4h25m
pod/hello-world4-6b8888db78-hxg5l                   1/1     Running   0          4h16m
pod/hello-world4-6b8888db78-qvw2m                   1/1     Running   0          4h16m
pod/hello-world4-6b8888db78-s9lm6                   1/1     Running   0          4h16m
pod/hello-world4-6b8888db78-td76q                   1/1     Running   0          4h16m
pod/hello-world5-76fddcbc79-t5gg6                   1/1     Running   0          116m
pod/hello-world6-649c4f785f-5cvv7                   1/1     Running   0          87m
pod/hello-world6-649c4f785f-c5l9n                   1/1     Running   0          87m
pod/hello-world6-649c4f785f-rnrt9                   1/1     Running   0          87m

NAME                                TYPE           CLUSTER-IP       EXTERNAL-IP   PORT(S)        AGE
service/hello-kubernetes-ehanmdr    LoadBalancer   10.103.58.99     <pending>     80:30106/TCP   15m
service/hello-world-pod             ClusterIP      10.106.255.91    <none>        80/TCP         17d
service/hello-world-service-file7   ClusterIP      10.102.135.213   <none>        80/TCP         83m
service/hello-world3                ClusterIP      10.100.16.229    <none>        80/TCP         4h45m
service/kubernetes                  ClusterIP      10.96.0.1        <none>        443/TCP        27d

NAME                                        READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/hello-kubernetes-ehanmdr    2/2     2            2           15m
deployment.apps/hello-world-pod-file7       10/10   10           10          83m
deployment.apps/hello-world2                1/1     1            1           5h14m
deployment.apps/hello-world3                6/6     6            6           4h45m
deployment.apps/hello-world4                4/4     4            4           4h16m
deployment.apps/hello-world5                1/1     1            1           116m
deployment.apps/hello-world6                3/3     3            3           87m

NAME                                                  DESIRED   CURRENT   READY   AGE
replicaset.apps/hello-kubernetes-ehanmdr-78489c5ff9   2         2         2       15m
replicaset.apps/hello-world-pod-file7-5579b48854      10        10        10      83m
replicaset.apps/hello-world2-65cd7875c                0         0         0       5h14m
replicaset.apps/hello-world2-7759968cfc               1         1         1       4h59m
replicaset.apps/hello-world3-5d745ccc5d               0         0         0       4h38m
replicaset.apps/hello-world3-7d79c8647c               6         6         6       4h25m
replicaset.apps/hello-world3-845f4bc4fd               0         0         0       4h45m
replicaset.apps/hello-world4-6b8888db78               4         4         4       4h16m
replicaset.apps/hello-world5-76fddcbc79               1         1         1       116m
replicaset.apps/hello-world6-649c4f785f               3         3         3       87m
(Rabiul - ehanmdr) ericsson@my-ubuntu-1:~/content/course/Final_test/Helm Charts$
```

Wrap up

Send your final test to your instructors by email with a meaningful title.

If this document is too big, feel free to zip everything in one file.

We hope you enjoyed this accelerated program and that you learned useful skills that will help you in your current and future endeavors.