CSEN 241: HW – 2

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Q.1] What is the image name for the pod?
Answer:

1. I used following command to create a deployment:

   kubectl create deployment hello-node --image=registry.k8s.io/e2e-test-images/agnhost:2.39 -- /agnhost netexec --http-port=8080

2. This command creates a deployment named **hello-node** with a pod that uses the specified image registry.k8s.io/e2e-test-images/agnhost:2.39

Q.2] What is a Kubernetes deployment?
Answer:

1. Deployment checks on the health of your Pod and restarts the Pod's Container if it terminates. Deployments are the recommended way to manage the creation and scaling of Pods.
2. A Deployment provides declarative updates for Pods and ReplicaSets.
3. You describe a desired state in a Deployment, and the Deployment Controller changes the actual state to the desired state at a controlled rate. You can define Deployments to create new ReplicaSets, or to remove existing Deployments and adopt all their resources with new Deployments.

Q.3] How many pods are in your deployment and what is the command you ran to create the deployment?
Answer:

1. There is only one pod in the deployment named as: hello-node-ccf4b9788-br72h
2. There is one replica set named as: hello-node-ccf4b9788

3. I used following command to create a deployment:

   kubectl create deployment hello-node --image=registry.k8s.io/e2e-test- images/agnhost:2.39 -- /agnhost netexec --http-port=8080

4. This command created a deployment named **hello-node** with a pod that uses the specified image registry.k8s.io/e2e-test-images/agnhost:2.39 The pod's entry point is set to /agnhost with the argument netexec --http-port=8080.

```
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl create deployment hello-node --image=registry.k8s.io/e2e-test-images/agnhost:2.39 -- /agnhost netexec --http-port=8080
deployment.apps/hello-node created
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl create deployment hello-node --image=registry.k8s.io/e2e-test-images/agnhost:2.39 -- /agnhost netexec --http-port=8080
error: failed to create deployment: deployments.apps "hello-node" already exists
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl get deployments
NAME         READY   UP-TO-DATE   AVAILABLE   AGE
hello-node   1/1     1            1           37s
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl get pods
NAME                          READY   STATUS    RESTARTS   AGE
hello-node-ccf4b9788-br72h    1/1     Running   0          89s
```

Q.4] What are the services you created, type of service and their IPs?

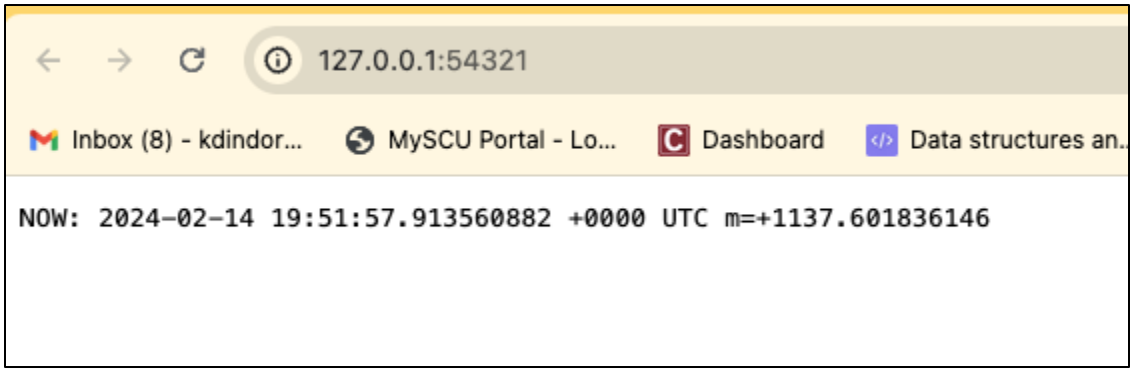
Answer:

1. Created a service named hello-node of type Load Balancer and exposed it on port 8080 to access it outside of the cluster.

   `kubectl expose deployment hello-node --type=LoadBalancer --port=8080`

2. The `kubectl get services` command shows that the hello-node service has a Cluster IP of 10.109.10.42.
3. The LoadBalancer service hello-node has been assigned an external IP of 192.168.49.2 and a NodePort of 32479.

```
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl logs hello-node-ccf4b9788-br72h
I0214 19:17:35.913415       1 log.go:195] Started HTTP server on port 8080
I0214 19:17:35.913603       1 log.go:195] Started UDP server on port  8081
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl expose deployment hello-node --type=LoadBalancer --port=8080
service/hello-node exposed
kartikidindorkar@Kartikis-MacBook-Pro ~ % kubectl get services
NAME          TYPE           CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
hello-node    LoadBalancer   10.109.10.42    <pending>     8080:32479/TCP   43s
kubernetes    ClusterIP      10.96.0.1       <none>        443/TCP          40m
kartikidindorkar@Kartikis-MacBook-Pro ~ % minikube service hello-node
|-----------|------------|-------------|---------------------------|
| NAMESPACE |    NAME    | TARGET PORT |            URL            |
|-----------|------------|-------------|---------------------------|
| default   | hello-node |        8080 | http://192.168.49.2:32479 |
|-----------|------------|-------------|---------------------------|
🏃  Starting tunnel for service hello-node.
|-----------|------------|-------------|------------------------|
| NAMESPACE |    NAME    | TARGET PORT |          URL           |
|-----------|------------|-------------|------------------------|
| default   | hello-node |             | http://127.0.0.1:54321 |
|-----------|------------|-------------|------------------------|
🎉  Opening service default/hello-node in default browser...
❗  Because you are using a Docker driver on darwin, the terminal needs to be open to run it.
```



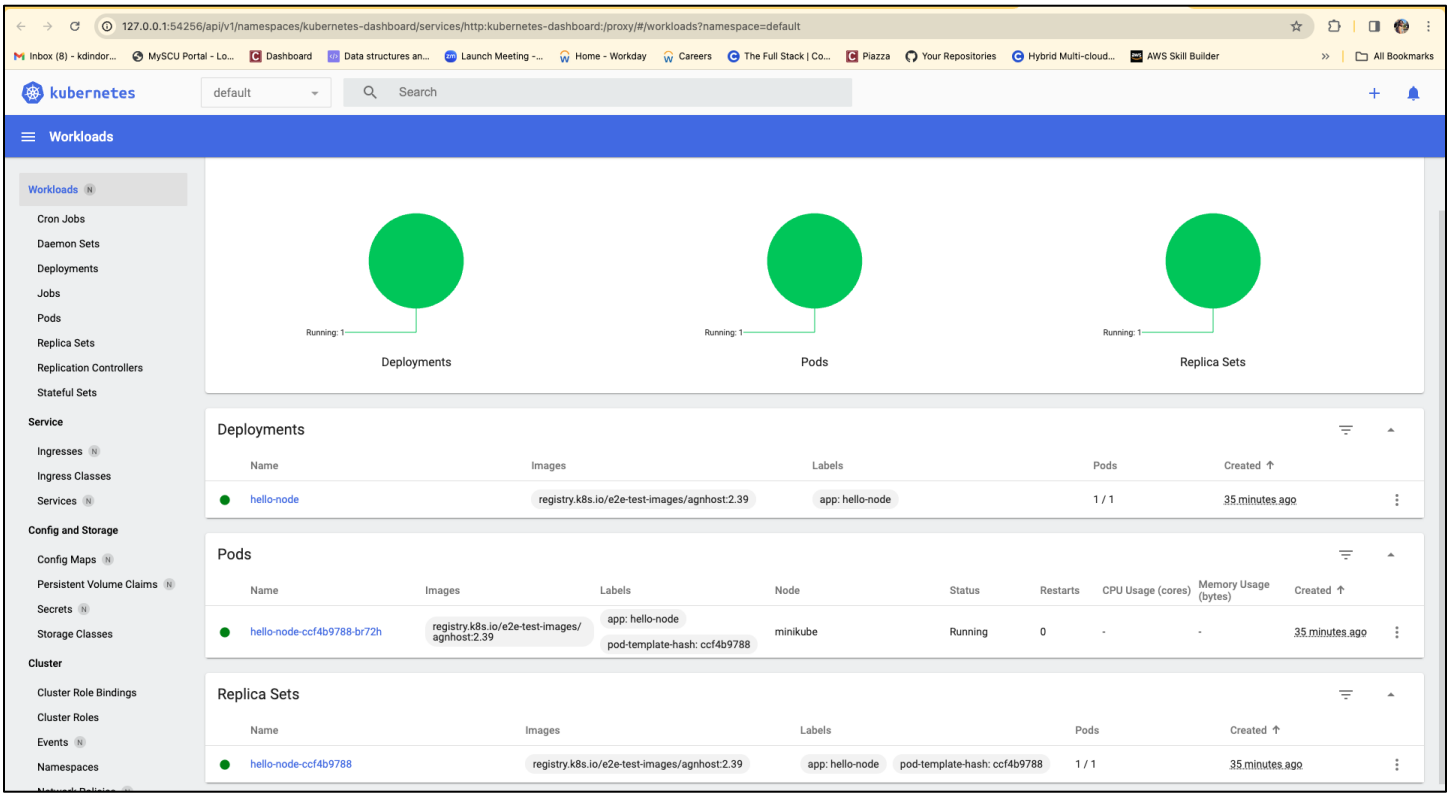
Q.5] What is your minikube version?

Answer:

1. My minikube version is: minikube v1.32.0 on Darwin 14.2.1 (arm64)

```
kartikidindorkar@Kartikis-MacBook-Pro ~ % minikube version
minikube version: v1.32.0
commit: 8220a6eb95f0a4d75f7f2d7b14cef975f050512d
```

My Kubernetes Dashboard:



References:

[1] Kubernetes Deployment: https://kubernetes.io/docs/concepts/workloads/controllers/deployment/

[2] Kubernetes Tutorial: https://kubernetes.io/docs/tutorials/hello-minikube/