

Linux-Foundation

Exam Questions CKA

Certified Kubernetes Administrator (CKA) Program



NEW QUESTION 1

CORRECT TEXT

List pod logs named "frontend" and search for the pattern "started" and write it to a file "/opt/error-logs"

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Kubectl logs frontend | grep -i "started" > /opt/error-logs

NEW QUESTION 2

CORRECT TEXT

Score:7%



Task

Create a new PersistentVolumeClaim

- Name: pv-volume
- Class: csi-hostpath-sc
- Capacity: 10Mi

Create a new Pod which mounts the PersistentVolumeClaim as a volume:

- Name: web-server
- Image: nginx
- Mount path: /usr/share/nginx/html

Configure the new Pod to have ReadWriteOnce access on the volume.

Finally, using kubectl edit or kubectl patch expand the PersistentVolumeClaim to a capacity of 70Mi and record that change.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
vi pvc.yaml
storageclass pvc
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: pv-volume
spec:
  accessModes:
  - ReadWriteOnce
  volumeMode: Filesystem
resources:
  requests:
  storage: 10Mi
  storageClassName: csi-hostpath-sc
# vi pod-pvc.yaml
apiVersion: v1
kind: Pod
metadata:
  name: web-server
spec:
  containers:
  - name: web-server
  image: nginx
  volumeMounts:
  - mountPath: "/usr/share/nginx/html"
  name: my-volume
volumes:
```

```
- name: my-volume
persistentVolumeClaim:
claimName: pv-volume
# craete
kubectl create -f pod-pvc.yaml
#edit
kubectl edit pvc pv-volume --record
```

NEW QUESTION 3

CORRECT TEXT

Get IP address of the pod – “nginx-dev”

- A. Mastered
- B. Not Mastered

Answer: A

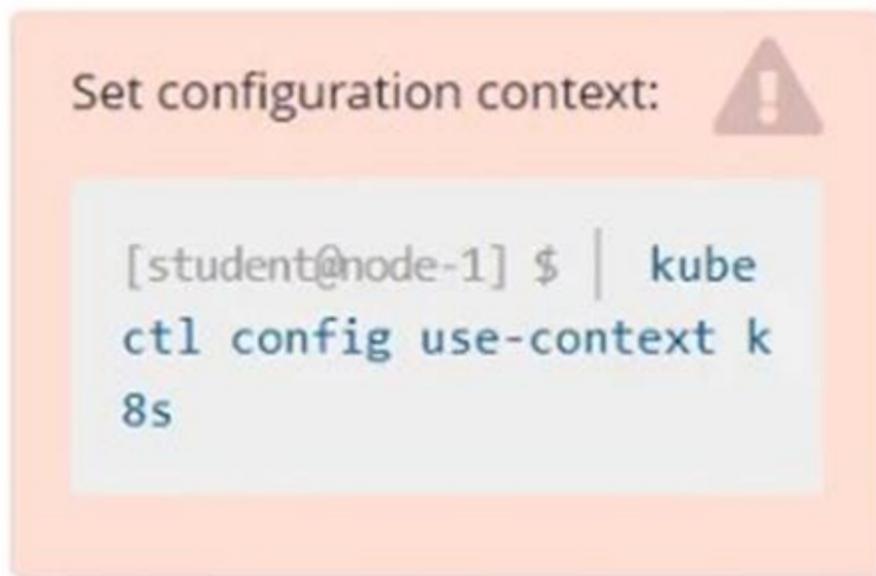
Explanation:

```
Kubect1 get po -o wide
Using JsonPath
kubect1 get pods -o=jsonpath='{range
items[*]}{.metadata.name}{\t}{.status.podIP}{\n}{end}'
```

NEW QUESTION 4

CORRECT TEXT

Score: 4%



Task

Schedule a pod as follows:

- Name: nginx-kusc00401
- Image: nginx
- Node selector: disk=ssd

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
#yaml
apiVersion: v1
kind: Pod
metadata:
name: nginx-kusc00401
spec:
containers:
- name: nginx
image: nginx
imagePullPolicy: IfNotPresent
nodeSelector:
disk: spinning
#
kubectl create -f node-select.yaml
```

NEW QUESTION 5

CORRECT TEXT

Create a deployment as follows:

- ? Name: nginx-random
- ? Exposed via a service nginx-random

? Ensure that the service & pod are accessible via their respective DNS records

? The container(s) within any pod(s) running as a part of this deployment should use the nginx Image

Next, use the utility nslookup to look up the DNS records of the service & pod and write the output to /opt/KUNW00601/service.dns and /opt/KUNW00601/pod.dns respectively.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```

root@node-1:~#
root@node-1:~# k create deploy nginx-random --image=nginx
deployment.apps/nginx-random created
root@node-1:~# k expose deploy nginx-random --name=nginx-random --port=80 --target-port=80
service/nginx-random exposed
root@node-1:~# vim dns.yaml
    
```

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```

apiVersion: v1
kind: Pod
metadata:
  name: busybox1
  labels:
    name: busybox
spec:
  containers:
  - image: busybox:1.28
    command:
      - sleep
      - "3600"
    name: busybox
    
```

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[Readme](#)
[Web Terminal](#)
THE LINUX FOUNDATION

```

root@node-1:~# k create deploy nginx-random --image=nginx
deployment.apps/nginx-random created
root@node-1:~# k expose deploy nginx-random --name=nginx-random --port=80 --target-port=80
service/nginx-random exposed
root@node-1:~# vim dns.yaml
root@node-1:~# k create -f dns.yaml
pod/busybox1 created
root@node-1:~# k get po -o wide | grep nginx-random
nginx-random-6d5766bbdc-ptzv2 1/1 Running 0 103s 10.244.2.16 k8s-node-
1 <none> <none>
root@node-1:~# k exec -it busybox1 -- nslookup nginx-random
Server: 10.96.0.10
Address 1: 10.96.0.10 kube-dns.kube-system.svc.cluster.local

Name: nginx-random
Address 1: 10.111.37.132 nginx-random.default.svc.cluster.local
root@node-1:~# k exec -it busybox1 -- nslookup nginx-random > /opt/KUNW00601/service.dns
root@node-1:~# k exec -it busybox1 -- nslookup 10-244-2-16.default.pod
Server: 10.96.0.10
Address 1: 10.96.0.10 kube-dns.kube-system.svc.cluster.local

Name: 10-244-2-16.default.pod
Address 1: 10.244.2.16 10-244-2-16.nginx-random.default.svc.cluster.local
root@node-1:~# k exec -it busybox1 -- nslookup 10-244-2-16.default.pod > /opt/KUNW00601/pod
.dns
    
```

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NEW QUESTION 6

CORRECT TEXT

Create a deployment spec file that will:

? Launch 7 replicas of the nginx Image with the labelapp_runtime_stage=dev

? deployment name: kual00201

Save a copy of this spec file to /opt/KUAL00201/spec_deployment.yaml

(or /opt/KUAL00201/spec_deployment.json).

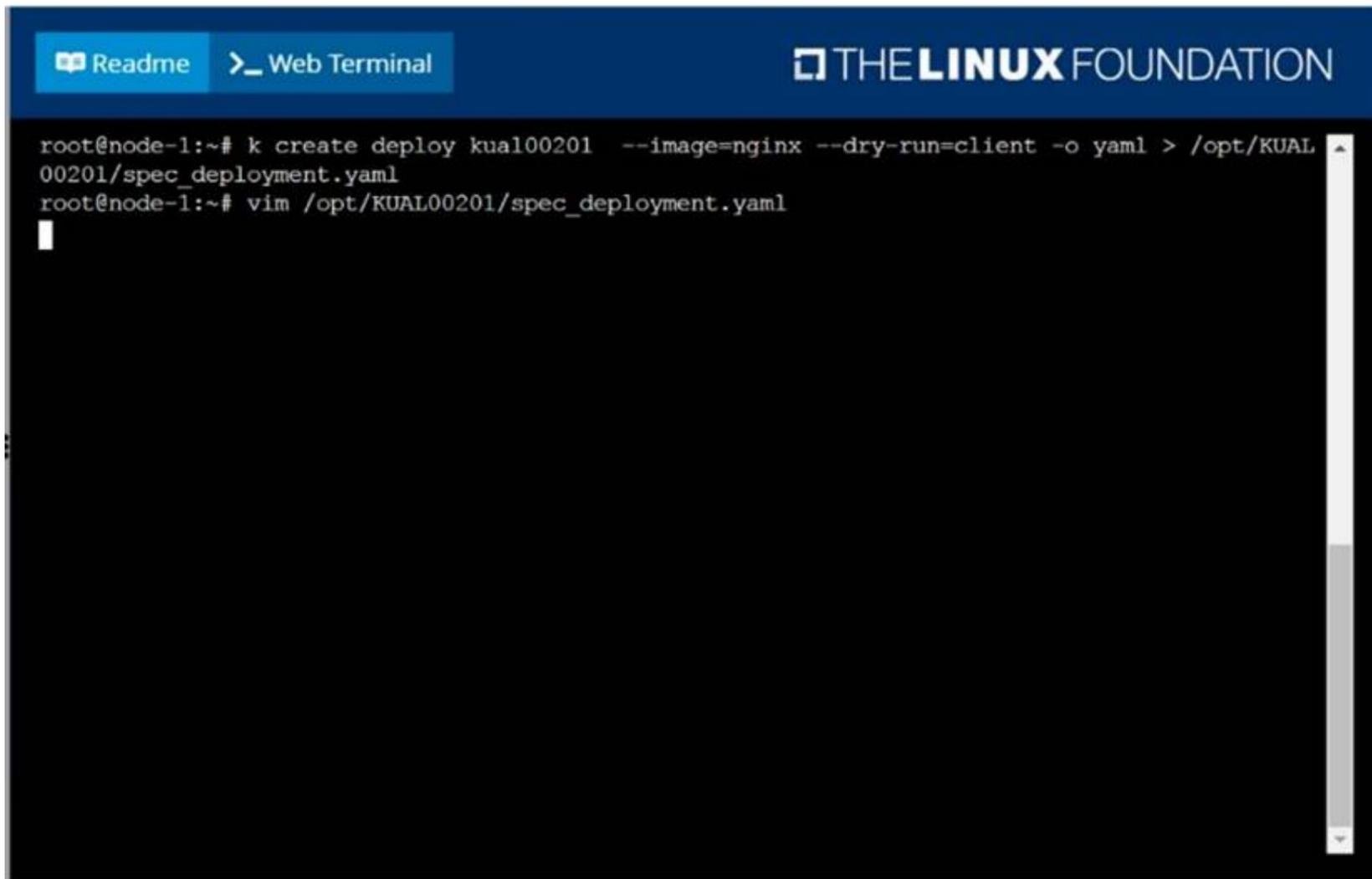
When you are done, clean up (delete) any new Kubernetes API object that you produced during this task.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution

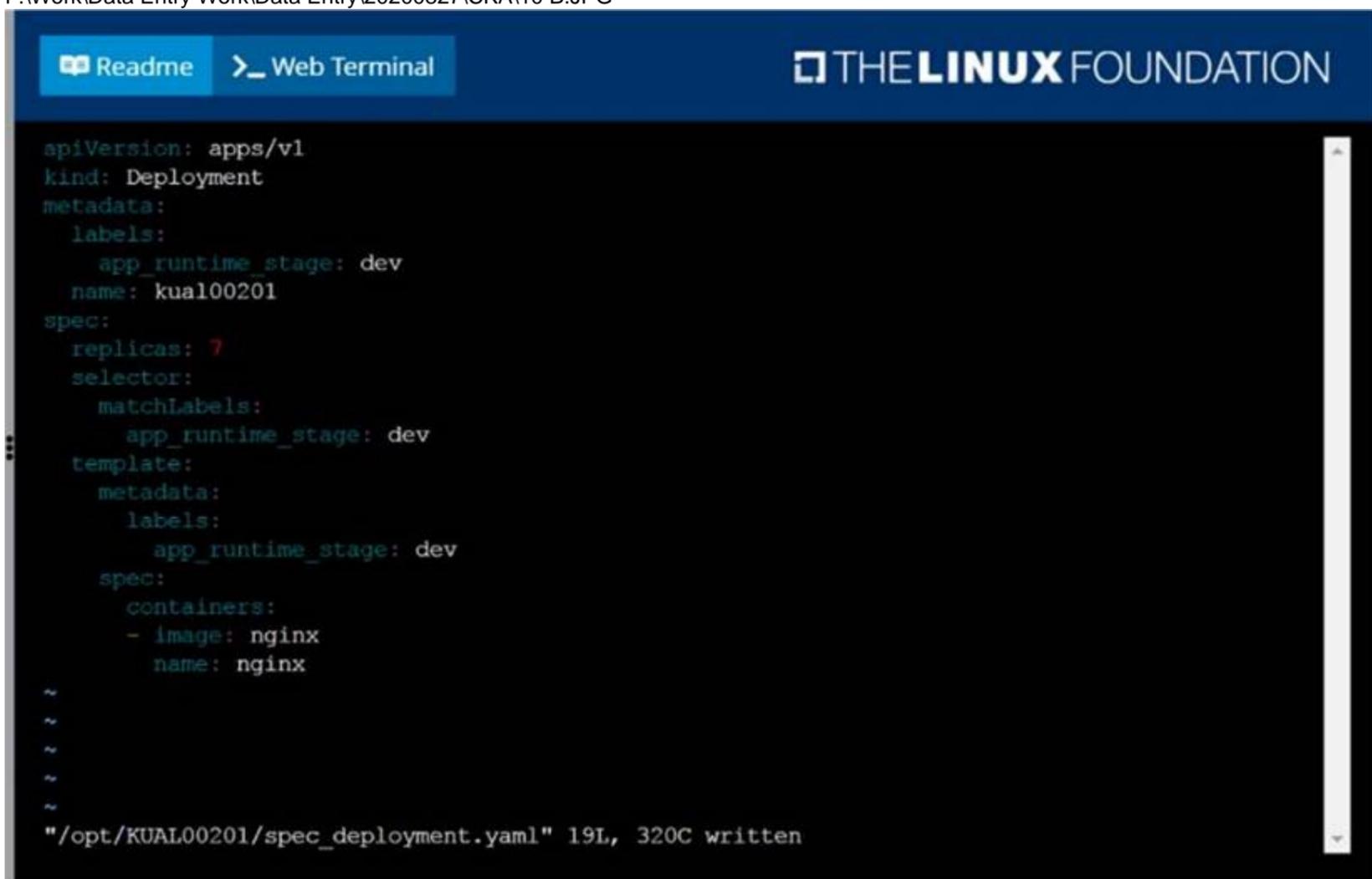


```

root@node-1:~# k create deploy kual00201 --image=nginx --dry-run=client -o yaml > /opt/KUAL
00201/spec_deployment.yaml
root@node-1:~# vim /opt/KUAL00201/spec_deployment.yaml

```

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```

apiVersion: apps/v1
kind: Deployment
metadata:
  labels:
    app_runtime_stage: dev
  name: kual00201
spec:
  replicas: 7
  selector:
    matchLabels:
      app_runtime_stage: dev
  template:
    metadata:
      labels:
        app_runtime_stage: dev
    spec:
      containers:
      - image: nginx
        name: nginx

```

"/opt/KUAL00201/spec_deployment.yaml" 19L, 320C written

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NEW QUESTION 7

CORRECT TEXT

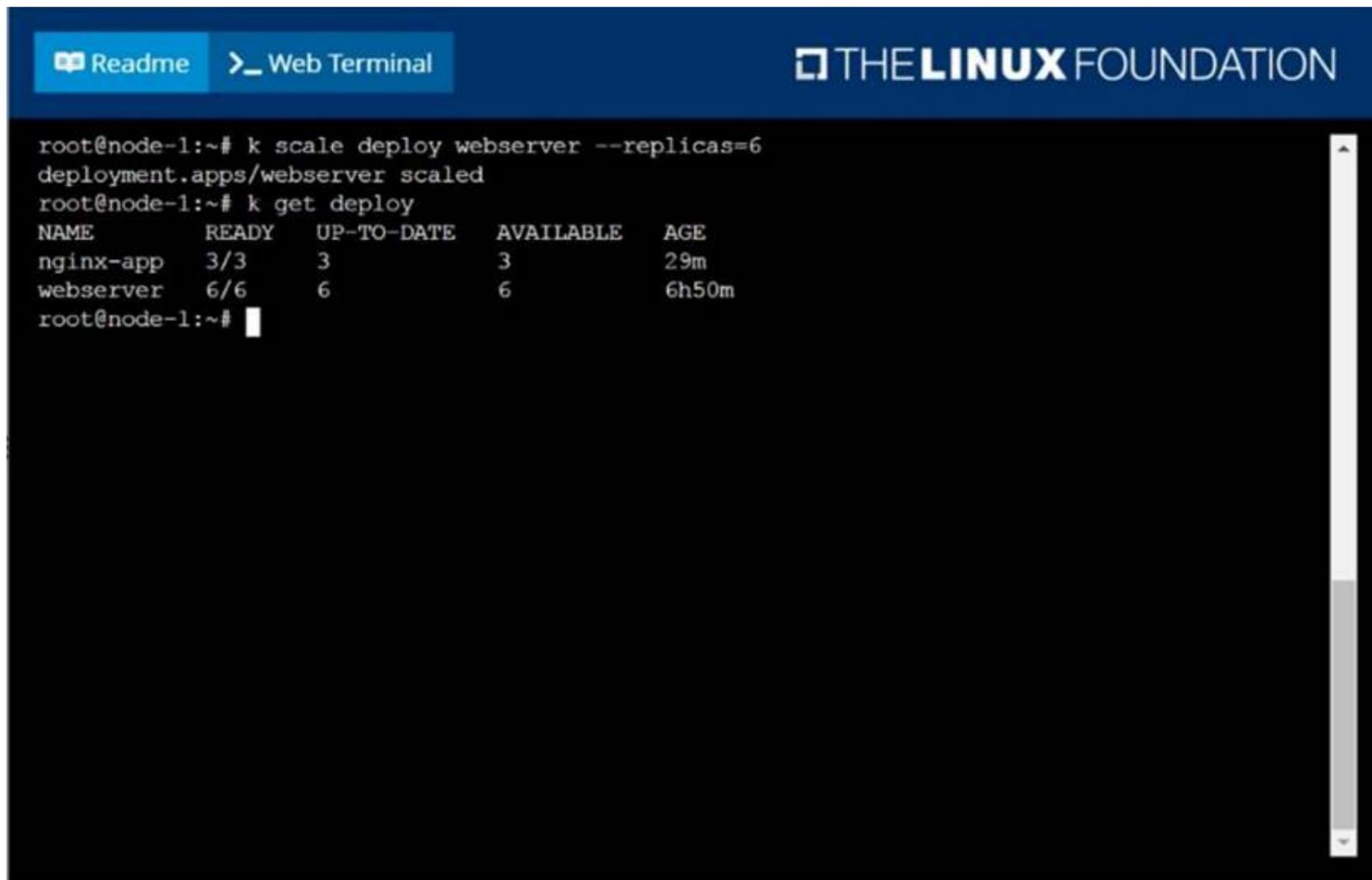
Scale the deployment webserver to 6 pods.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution



```

Readme Web Terminal THE LINUX FOUNDATION

root@node-1:~# k scale deploy webserver --replicas=6
deployment.apps/webserver scaled
root@node-1:~# k get deploy
NAME          READY    UP-TO-DATE    AVAILABLE    AGE
nginx-app     3/3      3             3            29m
webserver     6/6      6             6            6h50m
root@node-1:~#

```

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NEW QUESTION 8

CORRECT TEXT

Create a snapshot of the etcd instance running at <https://127.0.0.1:2379>, saving the snapshot to the file path `/srv/data/etcd-snapshot.db`.

The following TLS certificates/key are supplied for connecting to the server with `etcdctl`:

? CA certificate: `/opt/KUCM00302/ca.crt`

? Client certificate: `/opt/KUCM00302/etcd-client.crt`

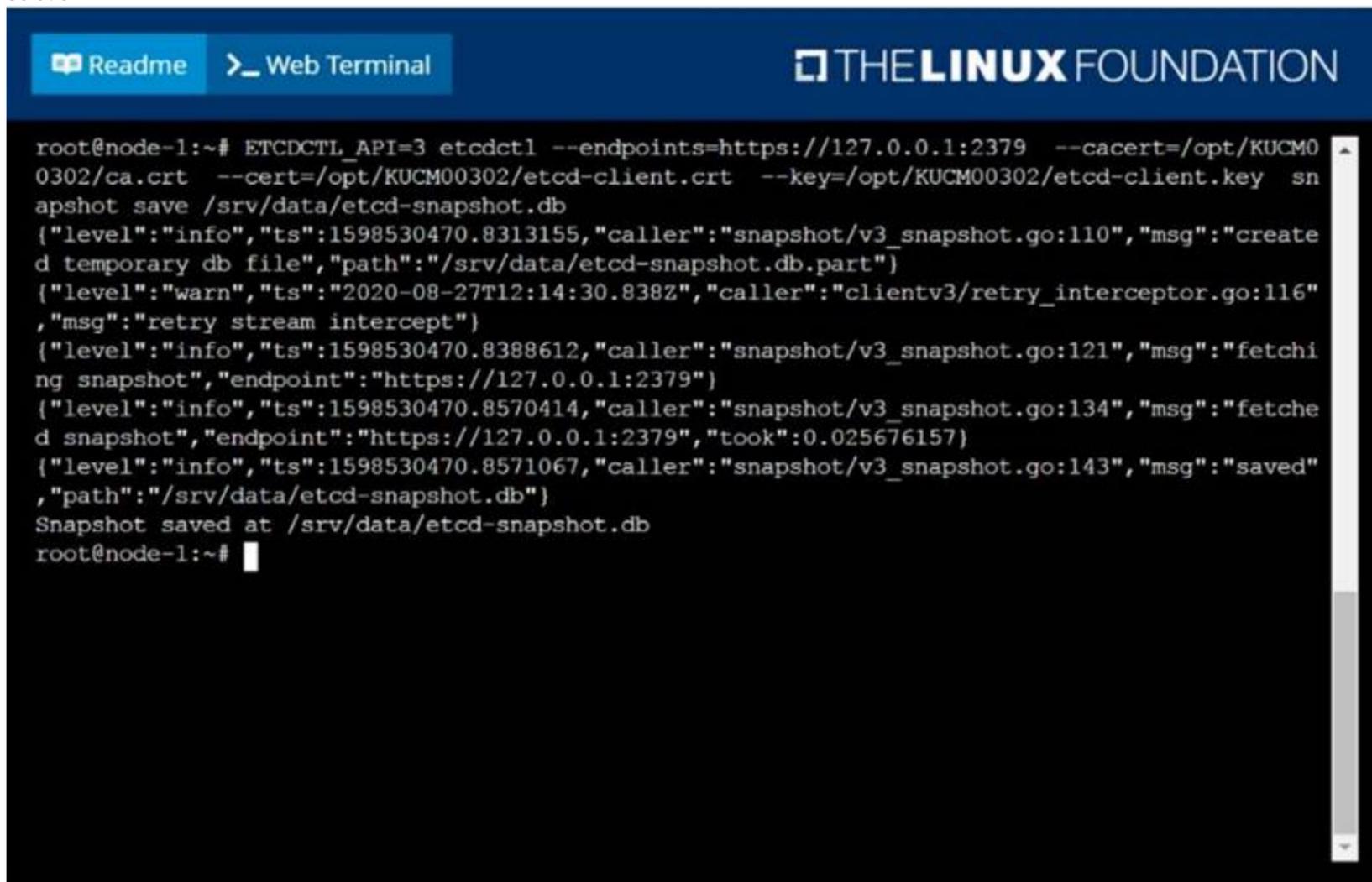
? Client key: `Topt/KUCM00302/etcd-client.key`

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution



```

Readme Web Terminal THE LINUX FOUNDATION

root@node-1:~# ETCDCCTL_API=3 etcdctl --endpoints=https://127.0.0.1:2379 --cacert=/opt/KUCM00302/ca.crt --cert=/opt/KUCM00302/etcd-client.crt --key=/opt/KUCM00302/etcd-client.key snapshot save /srv/data/etcd-snapshot.db
{"level":"info","ts":1598530470.8313155,"caller":"snapshot/v3_snapshot.go:110","msg":"created temporary db file","path":"/srv/data/etcd-snapshot.db.part"}
{"level":"warn","ts":"2020-08-27T12:14:30.838Z","caller":"clientv3/retry_interceptor.go:116","msg":"retry stream intercept"}
{"level":"info","ts":1598530470.8388612,"caller":"snapshot/v3_snapshot.go:121","msg":"fetching snapshot","endpoint":"https://127.0.0.1:2379"}
{"level":"info","ts":1598530470.8570414,"caller":"snapshot/v3_snapshot.go:134","msg":"fetched snapshot","endpoint":"https://127.0.0.1:2379","took":0.025676157}
{"level":"info","ts":1598530470.8571067,"caller":"snapshot/v3_snapshot.go:143","msg":"saved","path":"/srv/data/etcd-snapshot.db"}
Snapshot saved at /srv/data/etcd-snapshot.db
root@node-1:~#

```

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NEW QUESTION 9

CORRECT TEXT

For this item, you will have to ssh to the nodes ik8s-master-0 and ik8s-node-0 and complete all tasks on these nodes. Ensure that you return to the base node (hostname: node-1) when you have completed this item.

Context

As an administrator of a small development team, you have been asked to set up a Kubernetes cluster to test the viability of a new application.

Task

You must use kubeadm to perform this task. Any kubeadm invocations will require the use of the `--ignore-preflight-errors=all` option.

? Configure the node ik8s-master-0 as a master node. .

? Join the node ik8s-node-0 to the cluster.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution

You must use the kubeadm configuration file located at `/etc/kubeadm.conf` when initializing your cluster.

You may use any CNI plugin to complete this task, but if you don't have your favourite CNI plugin's manifest URL at hand, Calico is one popular option:

<https://docs.projectcalico.org/v3.14/manifests/calico.yaml>

Docker is already installed on both nodes and apt has been configured so that you can install the required tools.

NEW QUESTION 10

CORRECT TEXT

Create a file:

`/opt/KUCC00302/kucc00302.txt` that lists all pods that implement service baz in namespace development.

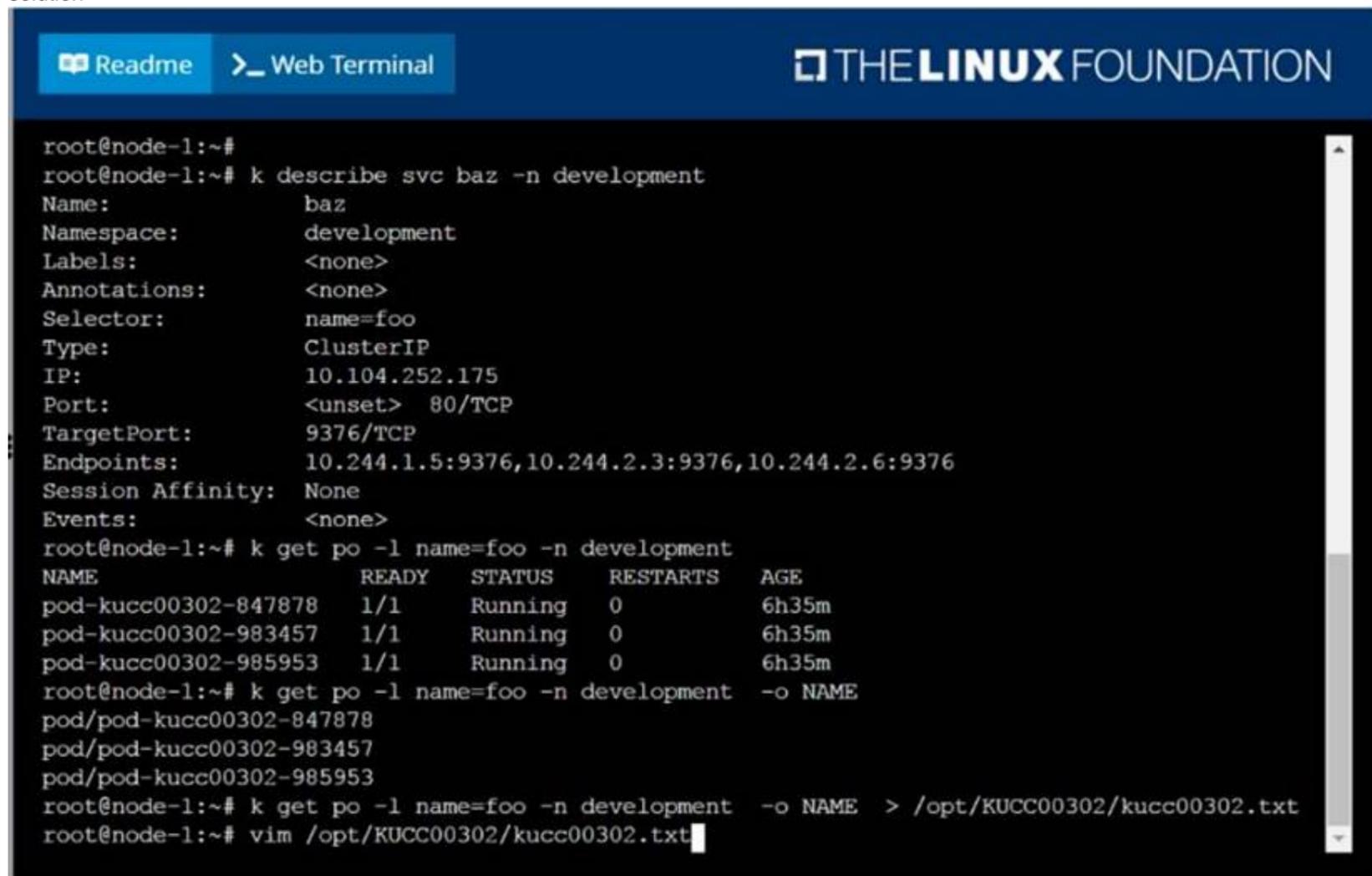
The format of the file should be one pod name per line.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution



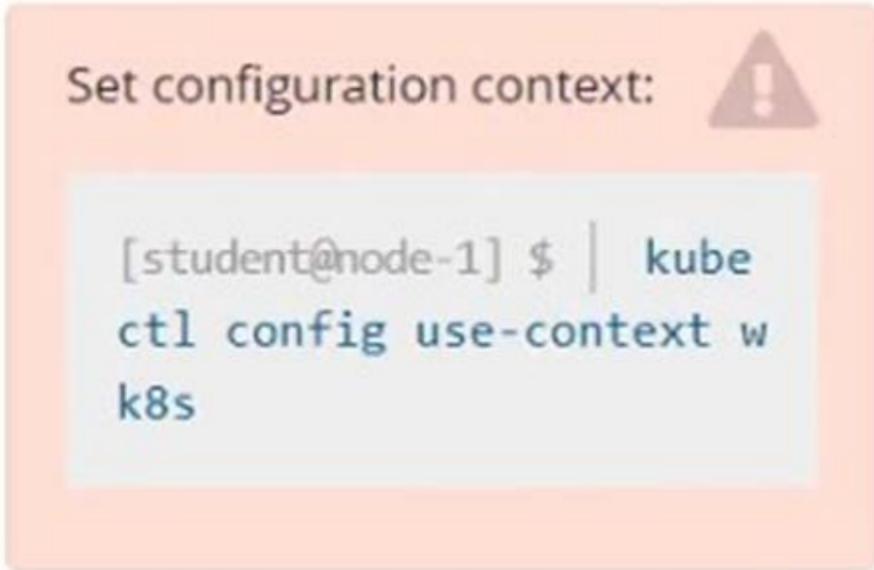
```

root@node-1:~#
root@node-1:~# k describe svc baz -n development
Name:          baz
Namespace:    development
Labels:       <none>
Annotations:  <none>
Selector:     name=foo
Type:         ClusterIP
IP:           10.104.252.175
Port:         <unset> 80/TCP
TargetPort:   9376/TCP
Endpoints:    10.244.1.5:9376,10.244.2.3:9376,10.244.2.6:9376
Session Affinity: None
Events:       <none>
root@node-1:~# k get po -l name=foo -n development
NAME                                READY   STATUS    RESTARTS   AGE
pod-kucc00302-847878                 1/1     Running   0           6h35m
pod-kucc00302-983457                 1/1     Running   0           6h35m
pod-kucc00302-985953                 1/1     Running   0           6h35m
root@node-1:~# k get po -l name=foo -n development -o NAME
pod/pod-kucc00302-847878
pod/pod-kucc00302-983457
pod/pod-kucc00302-985953
root@node-1:~# k get po -l name=foo -n development -o NAME > /opt/KUCC00302/kucc00302.txt
root@node-1:~# vim /opt/KUCC00302/kucc00302.txt

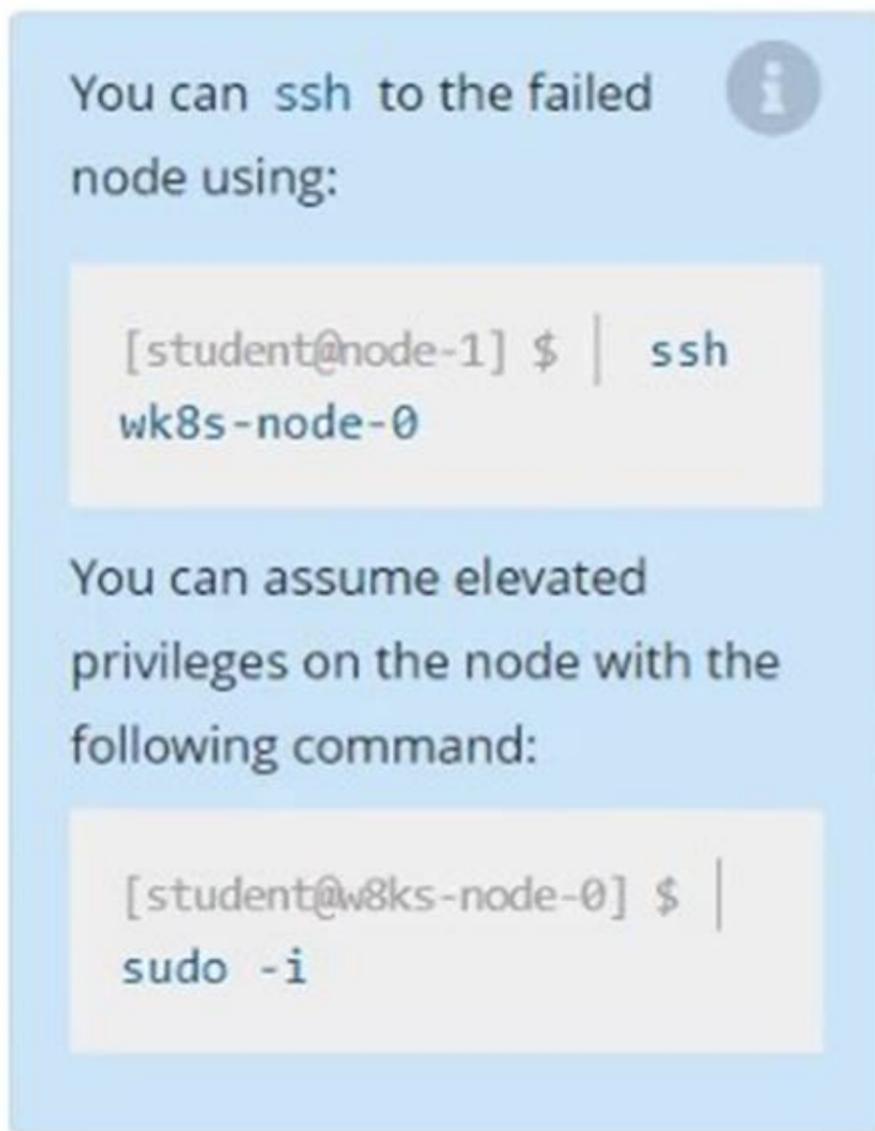
```

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NEW QUESTION 13
 CORRECT TEXT
 Score: 13%



Task
 A Kubernetes worker node, named wk8s-node-0 is in state NotReady. Investigate why this is the case, and perform any appropriate steps to bring the node to a Ready state, ensuring that any changes are made permanent.



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:
 sudo -i
 systemctl status kubelet
 systemctl start kubelet
 systemctl enable kubelet

NEW QUESTION 18
 CORRECT TEXT

Get list of all pods in all namespaces and write it to file "/opt/pods-list.yaml"

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

kubectl get po -all-namespaces > /opt/pods-list.yaml

NEW QUESTION 20

CORRECT TEXT

Perform the following tasks:

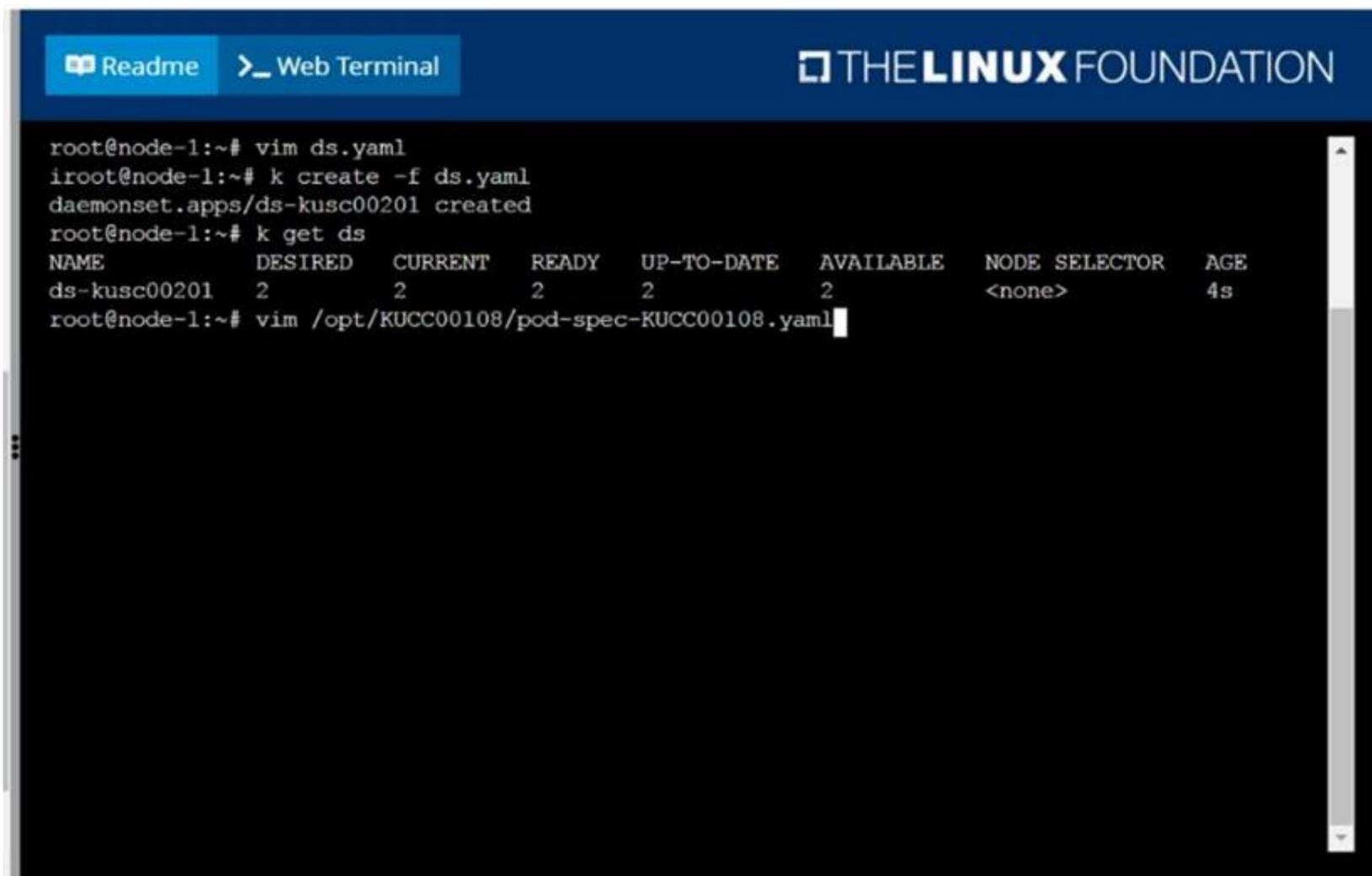
- ? Add an init container to hungry-bear (which has been defined in spec file /opt/KUCC00108/pod-spec-KUCC00108.yaml)
- ? The init container should create an empty file named /workdir/calm.txt
- ? If /workdir/calm.txt is not detected, the pod should exit
- ? Once the spec file has been updated with the init container definition, the pod should be created

A.

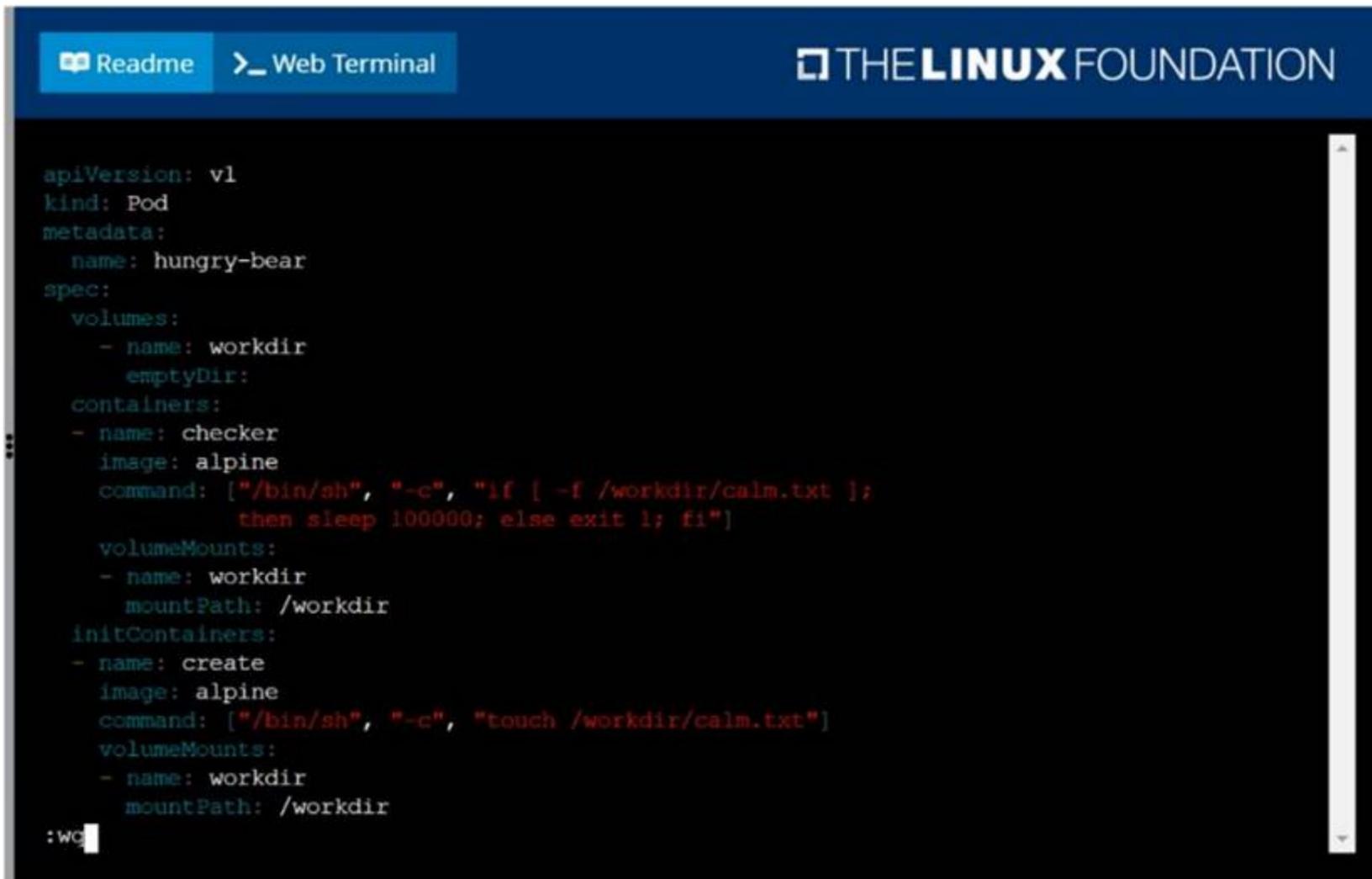
Answer: Seethesolutionbelow.

Explanation:

solution



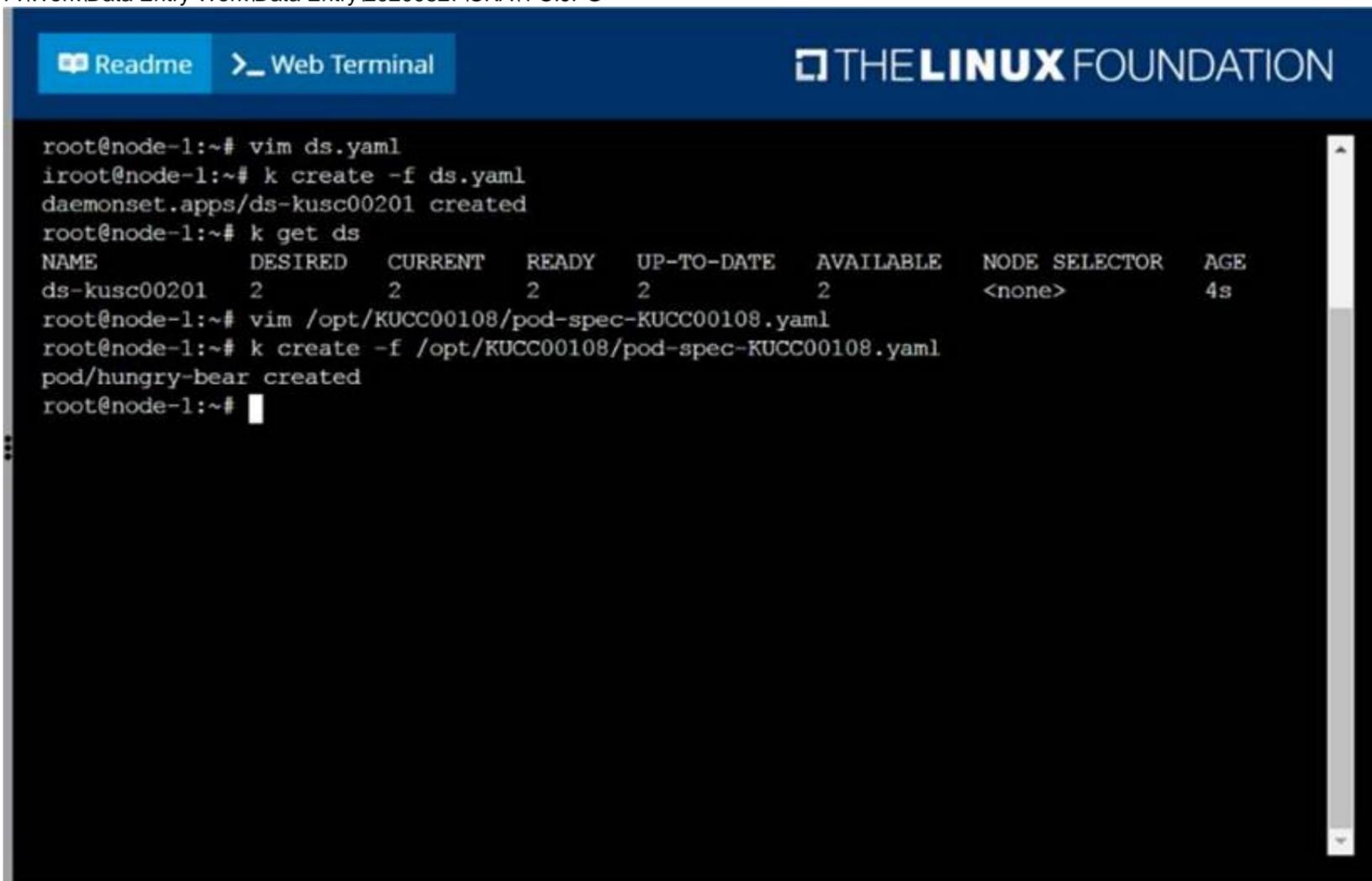
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The screenshot shows a web terminal interface with a dark background. At the top, there are two buttons: 'Readme' and 'Web Terminal'. The 'THE LINUX FOUNDATION' logo is in the top right. The terminal displays a YAML configuration for a pod named 'hungry-bear'. The configuration includes a volume named 'workdir' and two containers: 'checker' and 'create'. The 'checker' container runs a command that sleeps for 100,000 seconds if a file 'calm.txt' exists in the 'workdir' volume. The 'create' container runs a command to create the 'calm.txt' file in the 'workdir' volume.

```
apiVersion: v1
kind: Pod
metadata:
  name: hungry-bear
spec:
  volumes:
  - name: workdir
    emptyDir: {}
  containers:
  - name: checker
    image: alpine
    command: ["/bin/sh", "-c", "if [ -f /workdir/calm.txt ]; then sleep 100000; else exit 1; fi"]
    volumeMounts:
    - name: workdir
      mountPath: /workdir
  initContainers:
  - name: create
    image: alpine
    command: ["/bin/sh", "-c", "touch /workdir/calm.txt"]
    volumeMounts:
    - name: workdir
      mountPath: /workdir
:wg
```

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The screenshot shows a web terminal interface with a dark background. At the top, there are two buttons: 'Readme' and 'Web Terminal'. The 'THE LINUX FOUNDATION' logo is in the top right. The terminal shows a series of commands and their outputs in a Linux shell environment. The user runs 'vim ds.yaml', 'k create -f ds.yaml', 'k get ds', 'vim /opt/KUCC00108/pod-spec-KUCC00108.yaml', and 'k create -f /opt/KUCC00108/pod-spec-KUCC00108.yaml'.

```
root@node-1:~# vim ds.yaml
iroot@node-1:~# k create -f ds.yaml
daemonset.apps/ds-kusc00201 created
root@node-1:~# k get ds
NAME           DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
ds-kusc00201   2         2         2       2            2           <none>          4s
root@node-1:~# vim /opt/KUCC00108/pod-spec-KUCC00108.yaml
root@node-1:~# k create -f /opt/KUCC00108/pod-spec-KUCC00108.yaml
pod/hungry-bear created
root@node-1:~#
```

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NEW QUESTION 23

CORRECT TEXT

Create a busybox pod that runs the command "env" and save the output to "envpod" file

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

kubectrl run busybox --image=busybox --restart=Never --rm -it -- env > envpod.yaml

NEW QUESTION 28

CORRECT TEXT

List all the pods sorted by created timestamp

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

kubect1 get pods--sort-by=.metadata.creationTimestamp

NEW QUESTION 32

CORRECT TEXT

Create 2 nginx image pods in which one of them is labelled with env=prod and another one labelled with env=dev and verify the same.

- A. Mastered
- B. Not Mastered

Answer: A

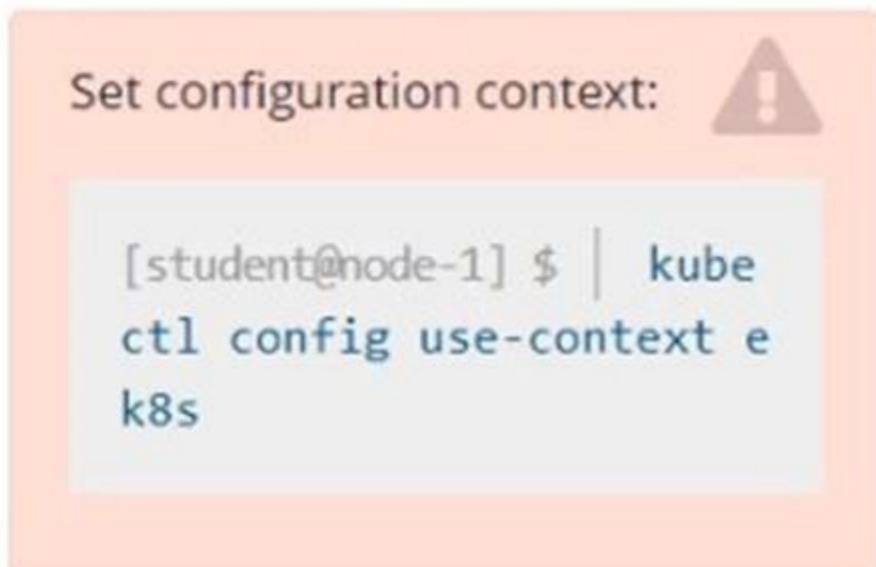
Explanation:

```
kubect1 run --generator=run-pod/v1 --image=nginx -- labels=env=prod nginx-prod --dry-run
-o yaml > nginx-prodpod.yaml Now, edit nginx-prod-pod.yaml file and remove entries like "creationTimestamp: null" "dnsPolicy: ClusterFirst"
vim nginx-prod-pod.yaml
apiVersion: v1
kind: Pod
metadata:
labels:
env: prod
name: nginx-prod
spec:
containers:
- image: nginx
name: nginx-prod
restartPolicy: Always
# kubect1 create -f nginx-prod-pod.yaml
kubect1 run --generator=run-pod/v1 --image=nginx --
labels=env=dev nginx-dev --dry-run -o yaml > nginx-dev-pod.yaml
apiVersion: v1
kind: Pod
metadata:
labels:
env: dev
name: nginx-dev
spec:
containers:
- image: nginx
name: nginx-dev
restartPolicy: Always
# kubect1 create -f nginx-prod-dev.yaml
Verify :
kubect1 get po --show-labels
kubect1 get po -l env=prod
kubect1 get po -l env=dev
```

NEW QUESTION 37

CORRECT TEXT

Score: 4%



Task

Set the node named ek8s-node-1 as unavailable and reschedule all the pods running on it.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

SOLUTION:

```
[student@node-1] > ssh ek8s
kubectl cordon ek8s-node-1
kubectl drain ek8s-node-1 --delete-local-data --ignore-daemonsets --force
```

NEW QUESTION 40

.....

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