Linux Foundation

CKA Exam

Certified Kubernetes Administrator (CKA) Program

Questions & Answers
Demo

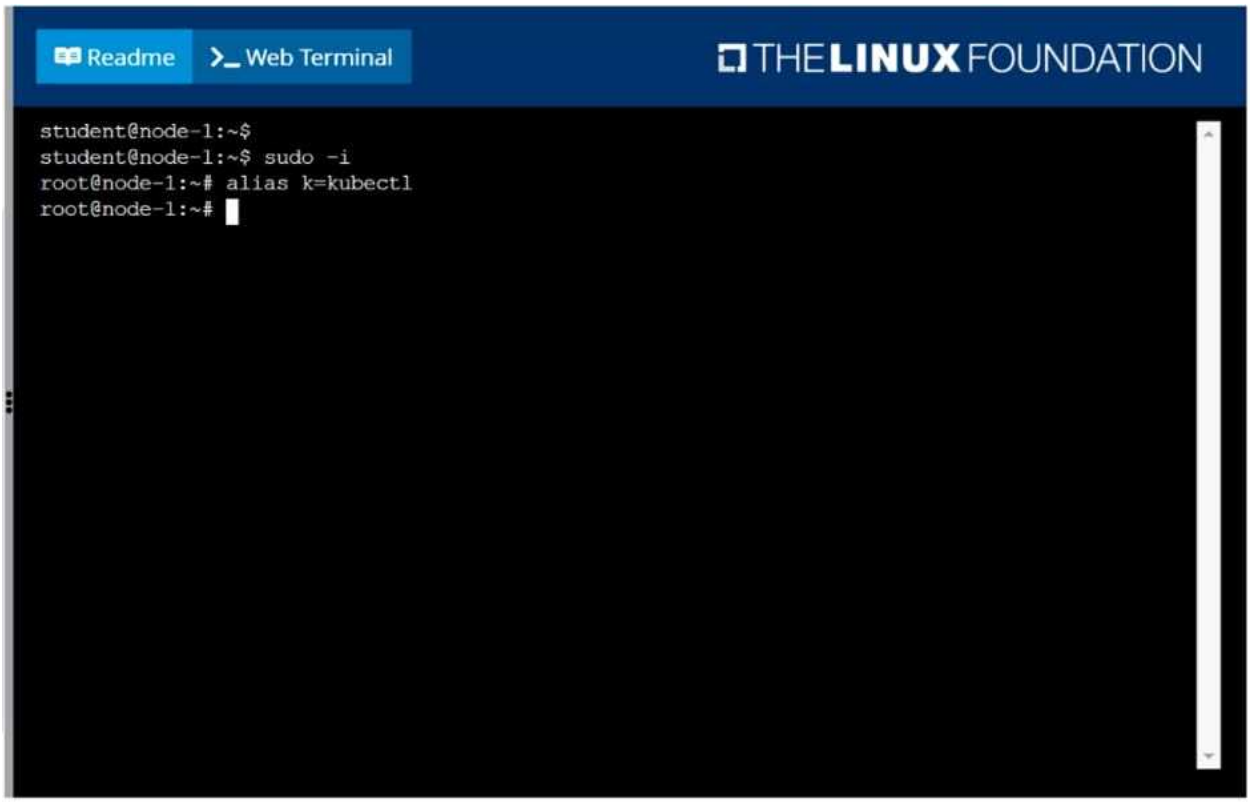
Version: 8.0

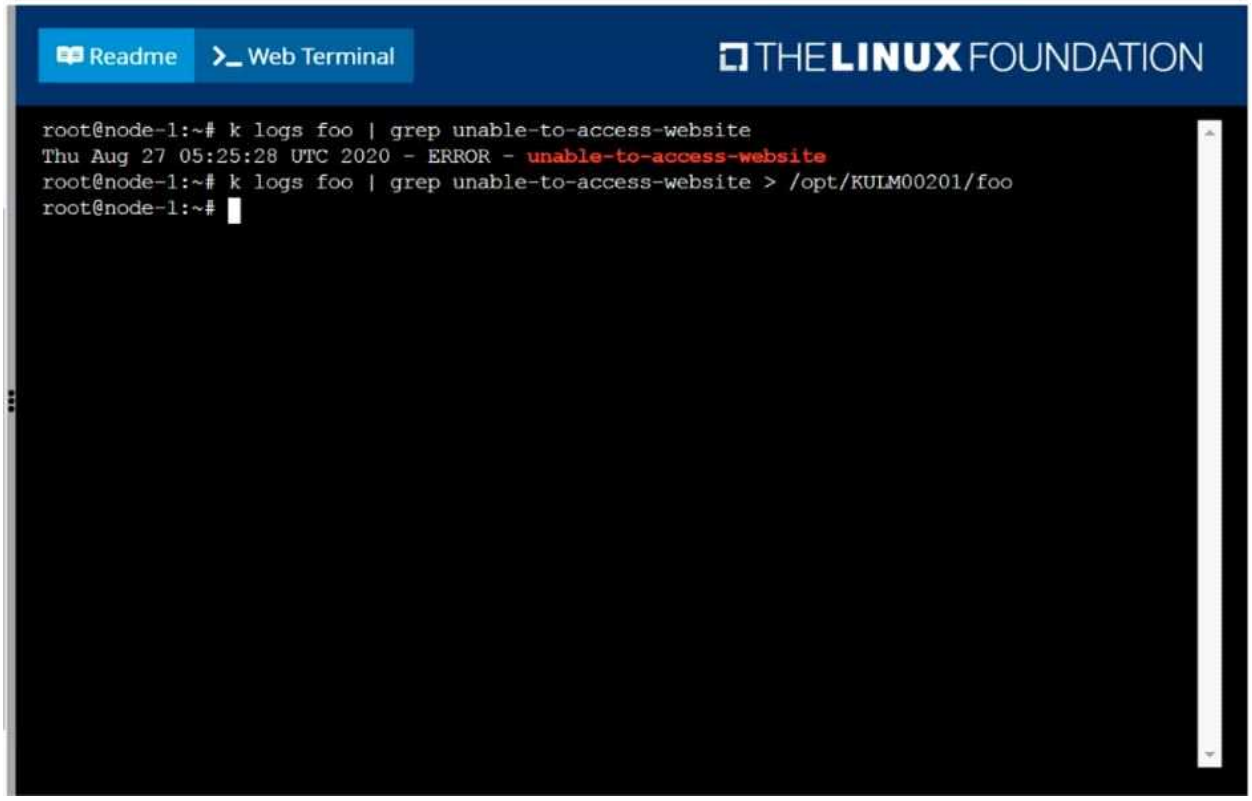
Question: 1

Monitor the logs of pod foo and:
Extract log lines corresponding to error
unable-to-access-website
Write them to
/opt/KULM00201/foo

Answer: See the solution below.

Explanation:
solution


Readme
Web Terminal
THE LINUX FOUNDATION
student@node-1:~$
student@node-1:~$ sudo -i
root@node-1:~# alias k=kubectl
root@node-1:~#

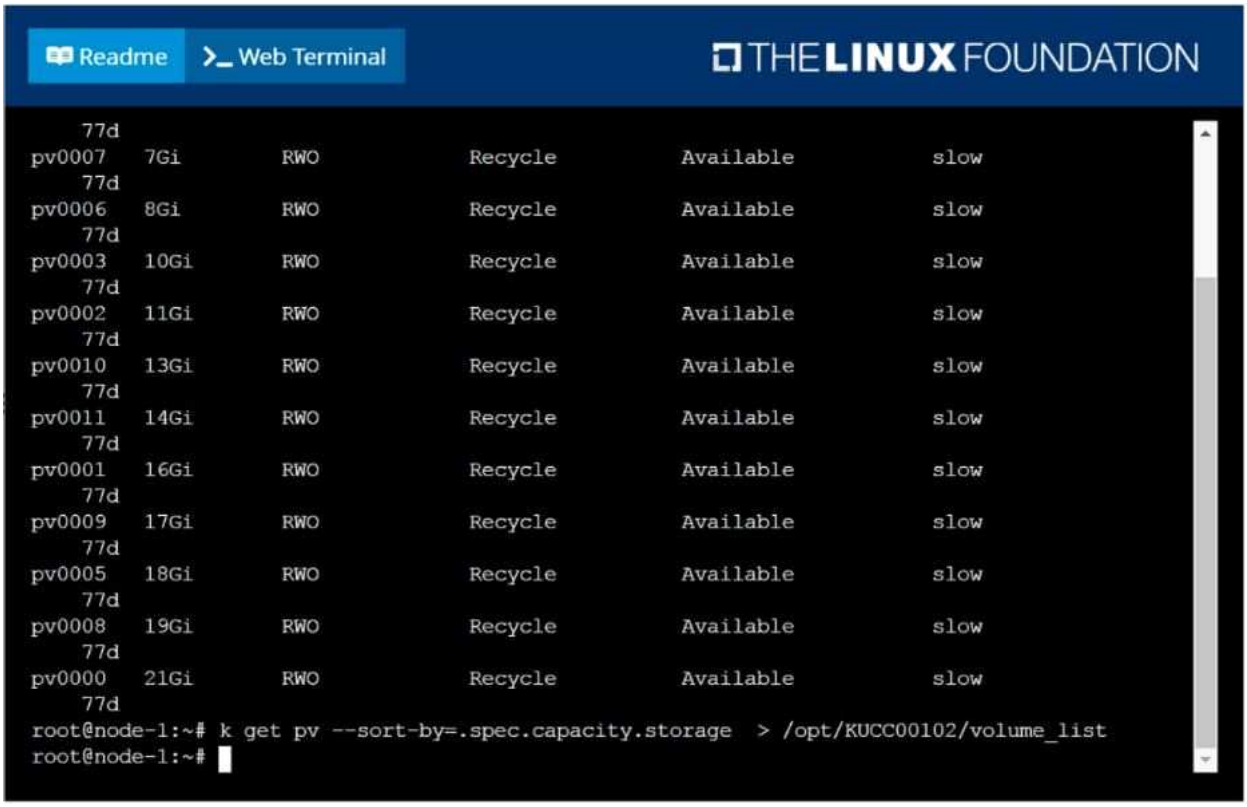

Readme
Web Terminal
THE LINUX FOUNDATION
root@node-1:~# k logs foo | grep unable-to-access-website
Thu Aug 27 05:25:28 UTC 2020 - ERROR - unable-to-access-website
root@node-1:~# k logs foo | grep unable-to-access-website > /opt/KULM00201/foo
root@node-1:~#

Question: 2

List all persistent volumes sorted by capacity, saving the full kubectl output to /opt/KUCC00102/volume_list. Use kubectl 's own functionality for sorting the output, and do not manipulate it any further.

Answer: See the solution below.

Explanation:
solution



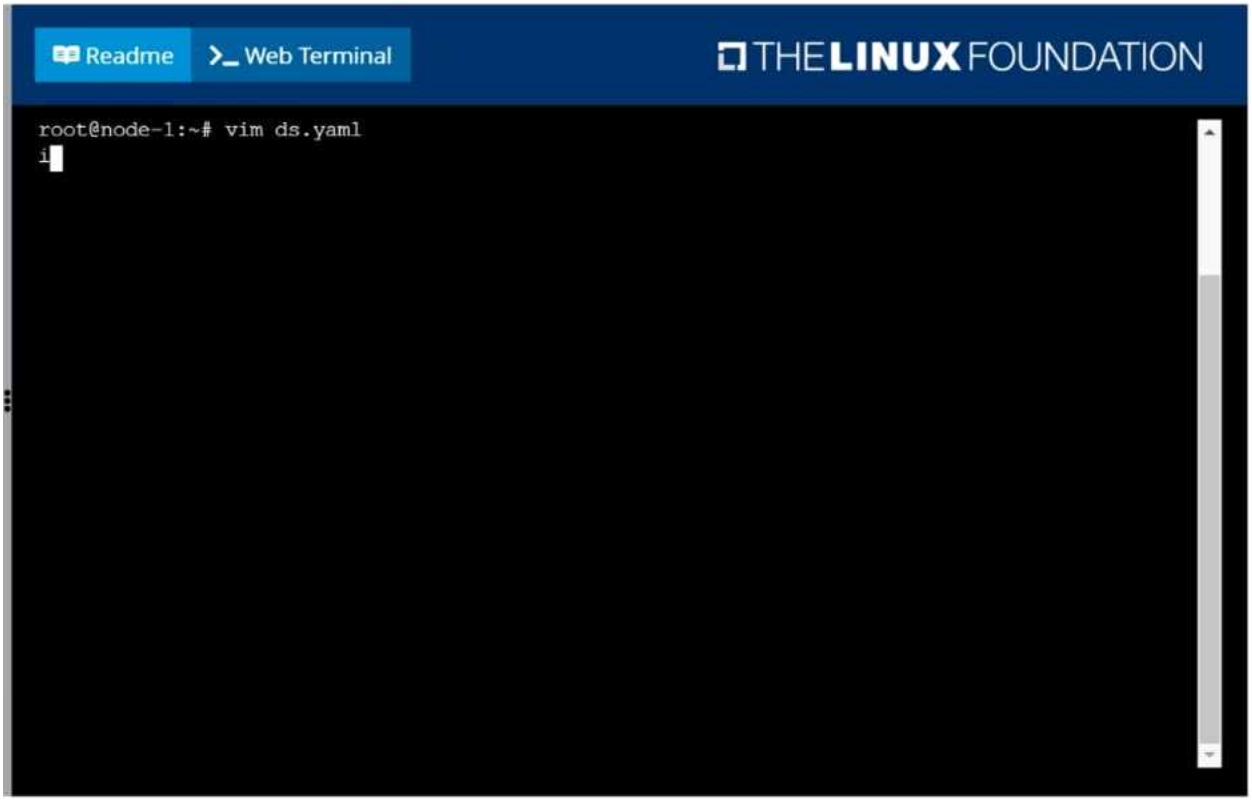
Question: 3

Ensure a single instance of pod nginx is running on each node of the Kubernetes cluster where nginx also represents the Image name which has to be used. Do not override any taints currently in place.
Use DaemonSet to complete this task and use ds-kusc00201 as DaemonSet name.

Answer: See the

solution below.

Explanation:
solution

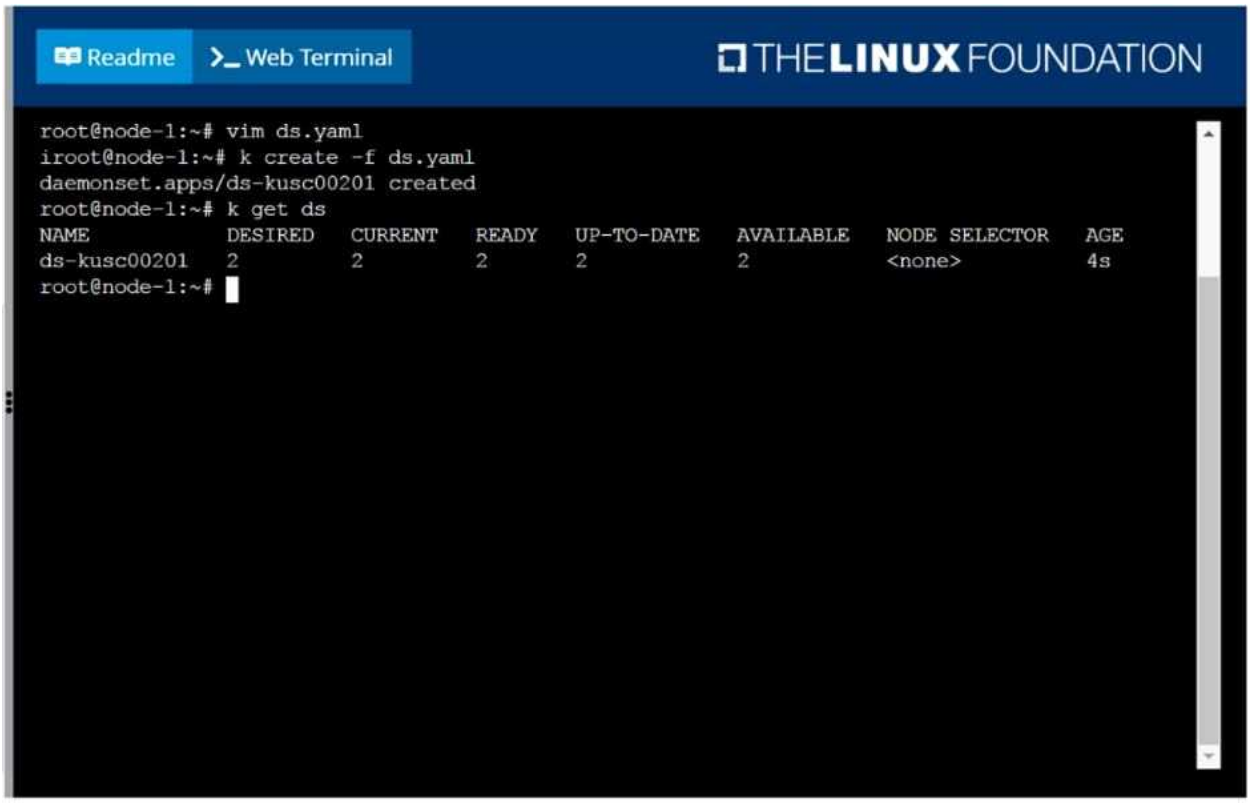


Readme | Web Terminal — THE LINUX FOUNDATION

```
apiVersion: apps/v1
kind: DaemonSet
metadata:
  name: fluentd-elasticsearch
  namespace: kube-system
  labels:
    k8s-app: fluentd-logging
spec:
  selector:
    matchLabels:
      name: fluentd-elasticsearch
  template:
    metadata:
      labels:
        name: fluentd-elasticsearch
    spec:
      tolerations:
      # this toleration is to have the daemonset runnable on master nodes
      # remove it if your masters can't run pods
      - key: node-role.kubernetes.io/master
        effect: NoSchedule
      containers:
      - name: nginx
        image: nginx
-- INSERT --                                                    17,19         All
```

Readme | Web Terminal — THE LINUX FOUNDATION

```
apiVersion: apps/v1
kind: DaemonSet
metadata:
  name: ds-kusc00201
spec:
  selector:
    matchLabels:
      name: fluentd-elasticsearch
  template:
    metadata:
      labels:
        name: fluentd-elasticsearch
    spec:
      containers:
      - name: nginx
        image: nginx
~
~
~
~
~
~
~
~
:wq
```

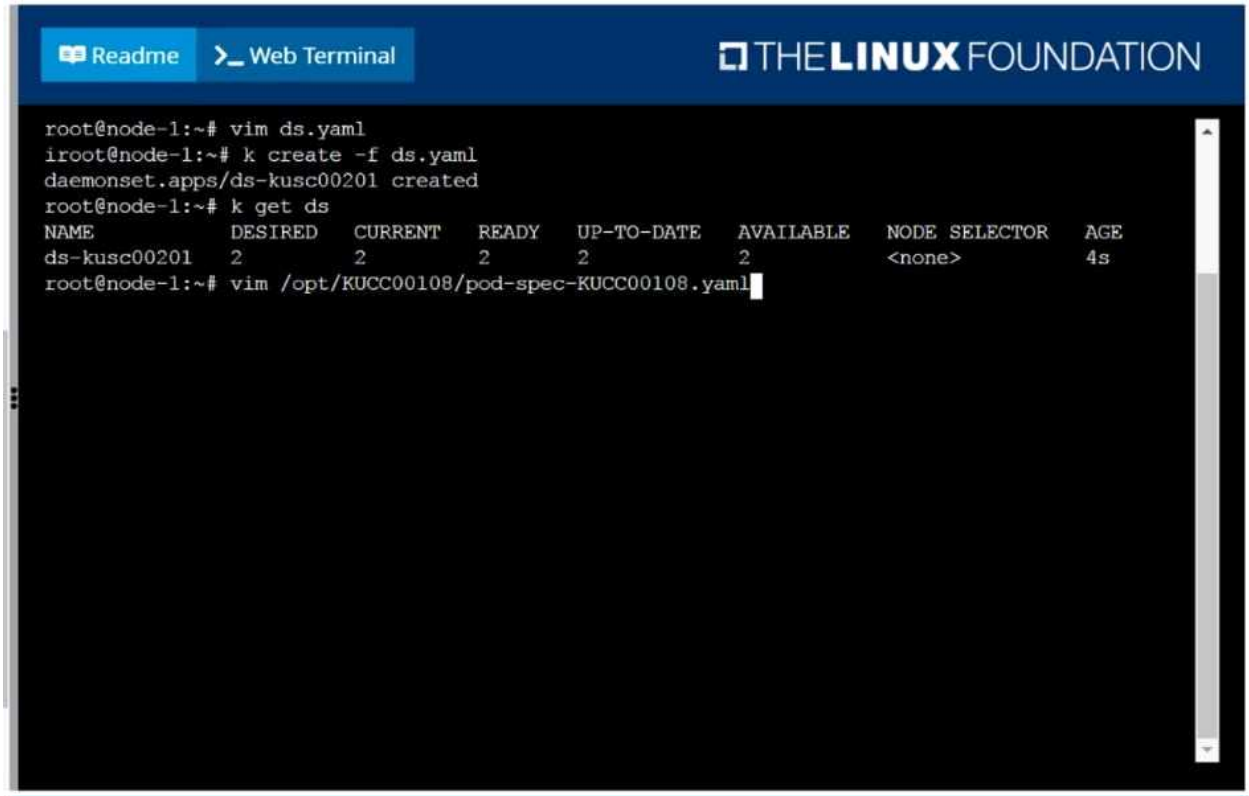


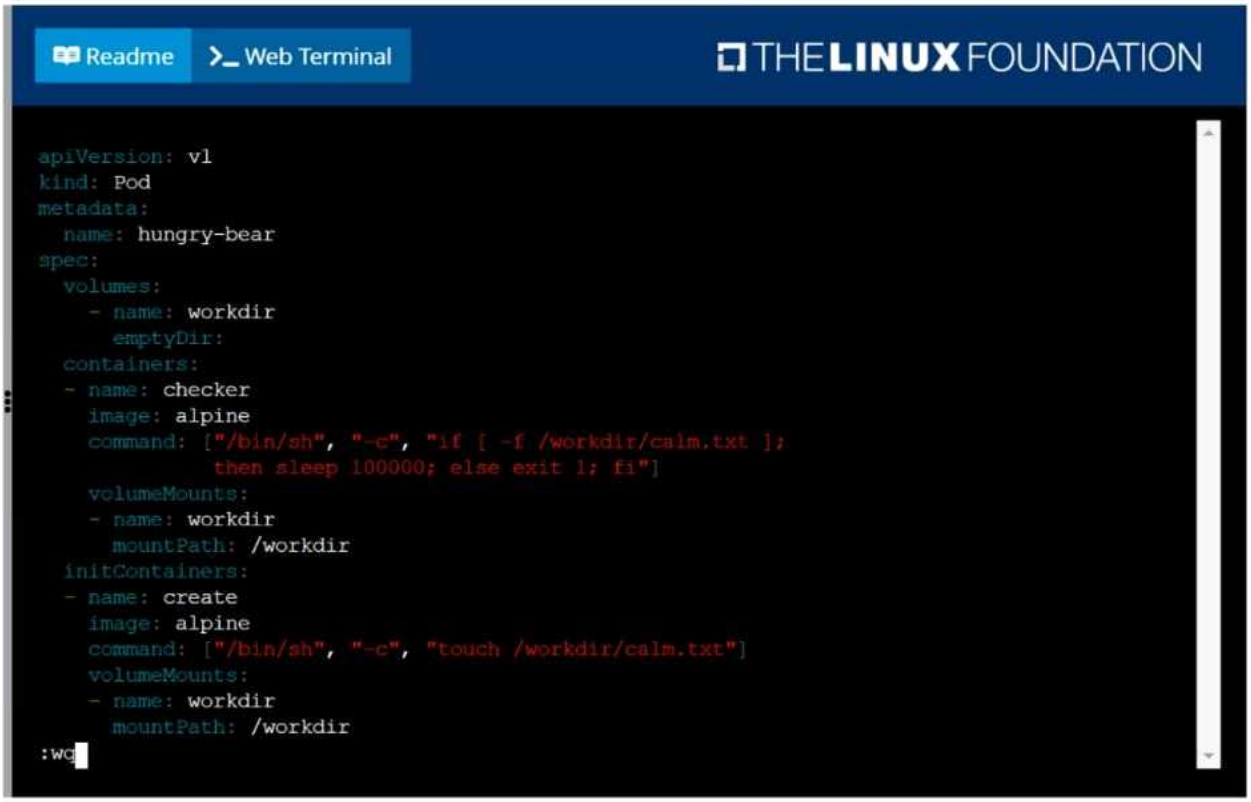
Question: 4

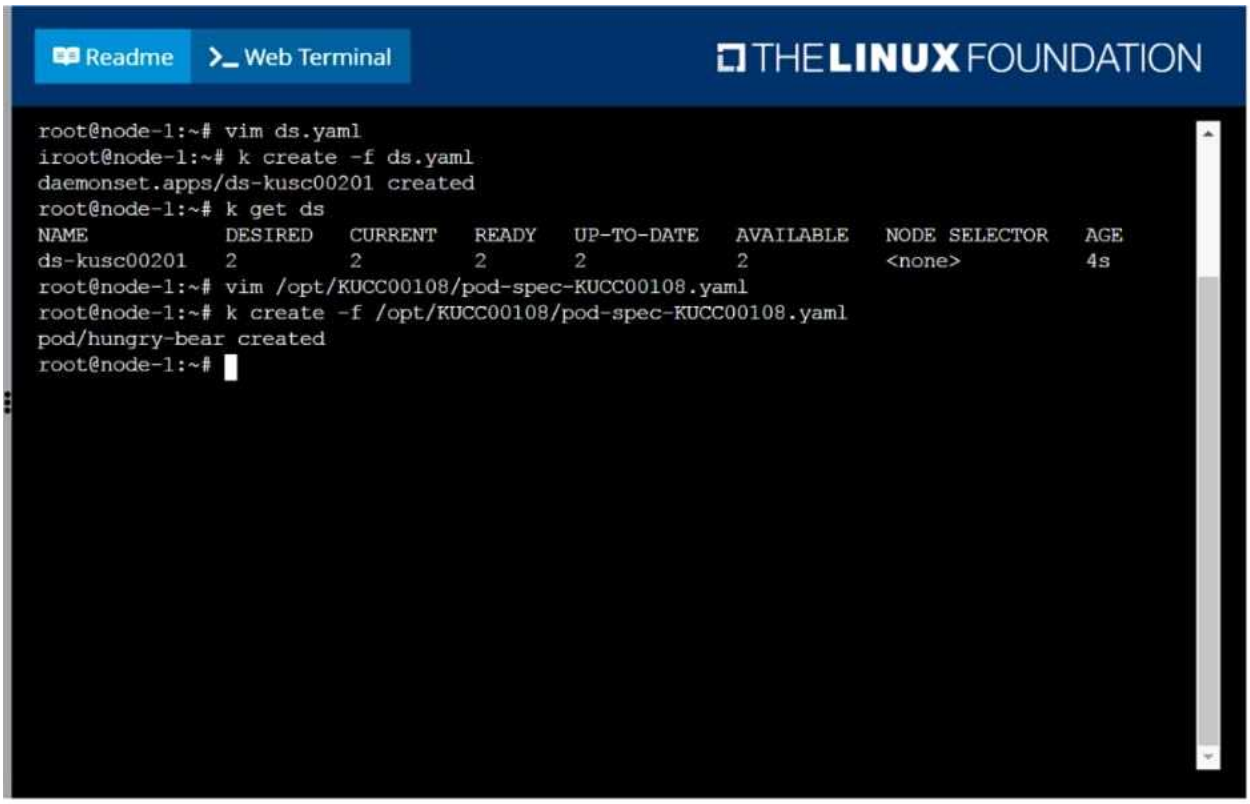
Perform the following tasks:
Add an init container to hungry-bear (which has been defined in spec file /opt/KUCC00108/pod-spec-KUC
C00108.yaml
)
The init container should create an empty file named /workdir/calm.txt
If /workdir/calm.txt is not detected, the pod should exit
Once the spec file has been updated with the init container definition, the pod should be created

Answer: See the solution below.

Explanation:
solution


Readme
Web Terminal
THE LINUX FOUNDATION
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


Readme
Web Terminal
THE LINUX FOUNDATION
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
:wq

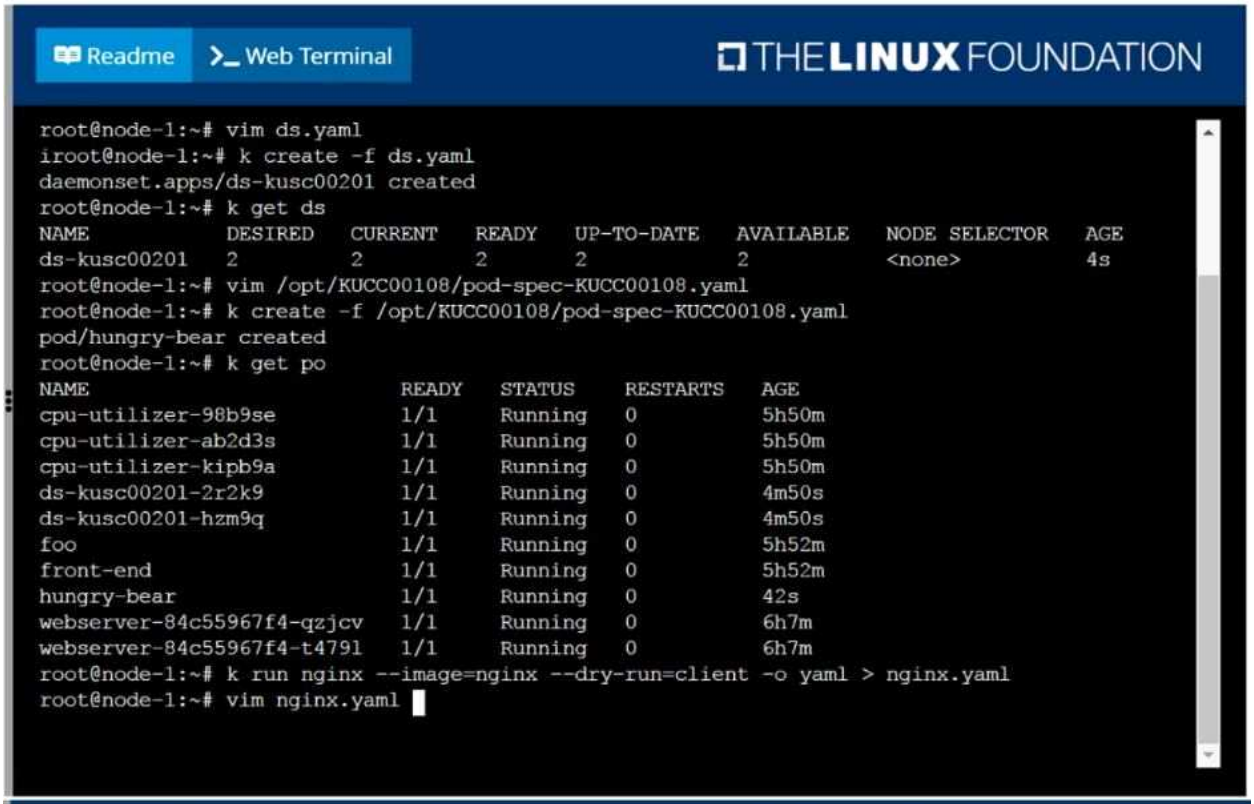


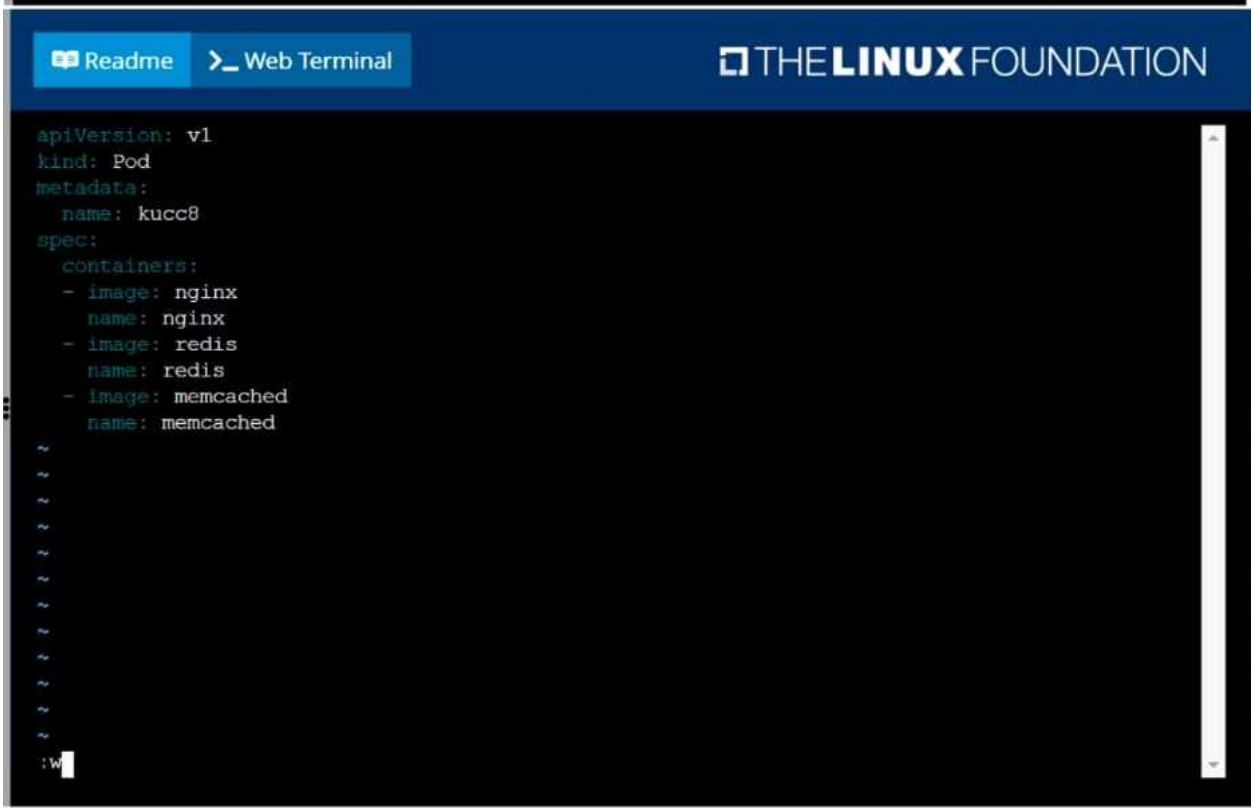
Question: 5

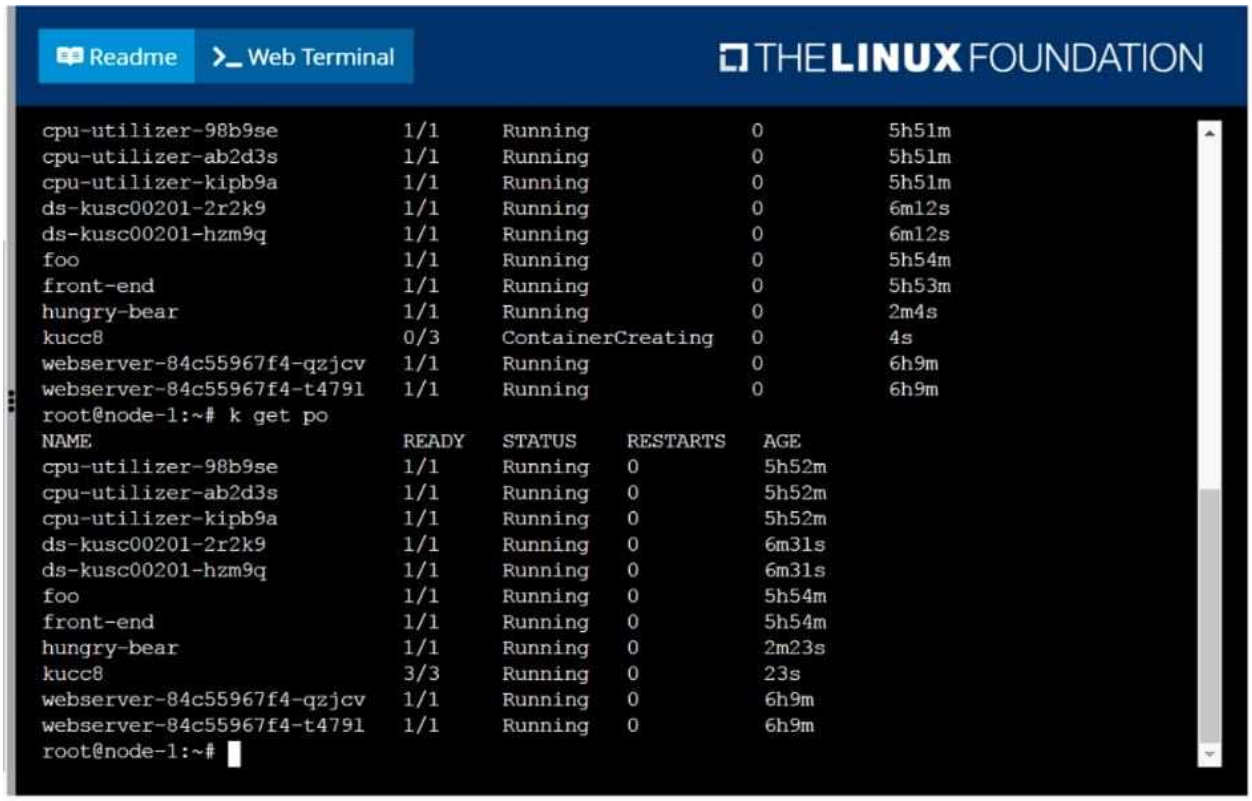
Create a pod named kucc8 with a single app container for each of the following images running inside (there may be between 1 and 4 images specified):
nginx + redis + memcached.

Answer: See the solution below.

Explanation:
solution


Readme
Web Terminal
THE LINUX FOUNDATION
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:~# k get po
NAME READY STATUS RESTARTS AGE
cpu-utilizer-98b9se 1/1 Running 0 5h50m
cpu-utilizer-ab2d3s 1/1 Running 0 5h50m
cpu-utilizer-kipb9a 1/1 Running 0 5h50m
ds-kusc00201-2r2k9 1/1 Running 0 4m50s
ds-kusc00201-hzm9q 1/1 Running 0 4m50s
foo 1/1 Running 0 5h52m
front-end 1/1 Running 0 5h52m
hungry-bear 1/1 Running 0 42s
webserver-84c55967f4-qzjcv 1/1 Running 0 6h7m
webserver-84c55967f4-t4791 1/1 Running 0 6h7m
root@node-1:~# k run nginx --image=nginx --dry-run=client -o yaml > nginx.yaml
root@node-1:~# vim nginx.yaml


Readme
Web Terminal
THE LINUX FOUNDATION
apiVersion: v1
kind: Pod
metadata:
name: kucc8
spec:
containers:
- image: nginx
name: nginx
- image: redis
name: redis
- image: memcached
name: memcached
:w


Readme
Web Terminal
THE LINUX FOUNDATION
cpu-utilizer-98b9se 1/1 Running 0 5h51m
cpu-utilizer-ab2d3s 1/1 Running 0 5h51m
cpu-utilizer-kipb9a 1/1 Running 0 5h51m
ds-kusc00201-2r2k9 1/1 Running 0 6m12s
ds-kusc00201-hzm9q 1/1 Running 0 6m12s
foo 1/1 Running 0 5h54m
front-end 1/1 Running 0 5h53m
hungry-bear 1/1 Running 0 2m4s
kucc8 0/3 ContainerCreating 0 4s
webserver-84c55967f4-qzjcv 1/1 Running 0 6h9m
webserver-84c55967f4-t4791 1/1 Running 0 6h9m
root@node-1:~# k get po
NAME READY STATUS RESTARTS AGE
cpu-utilizer-98b9se 1/1 Running 0 5h52m
cpu-utilizer-ab2d3s 1/1 Running 0 5h52m
cpu-utilizer-kipb9a 1/1 Running 0 5h52m
ds-kusc00201-2r2k9 1/1 Running 0 6m31s
ds-kusc00201-hzm9q 1/1 Running 0 6m31s
foo 1/1 Running 0 5h54m
front-end 1/1 Running 0 5h54m
hungry-bear 1/1 Running 0 2m23s
kucc8 3/3 Running 0 23s
webserver-84c55967f4-qzjcv 1/1 Running 0 6h9m
webserver-84c55967f4-t4791 1/1 Running 0 6h9m
root@node-1:~#

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