Linux Foundation

CKA Exam

Kubernetes Administrator

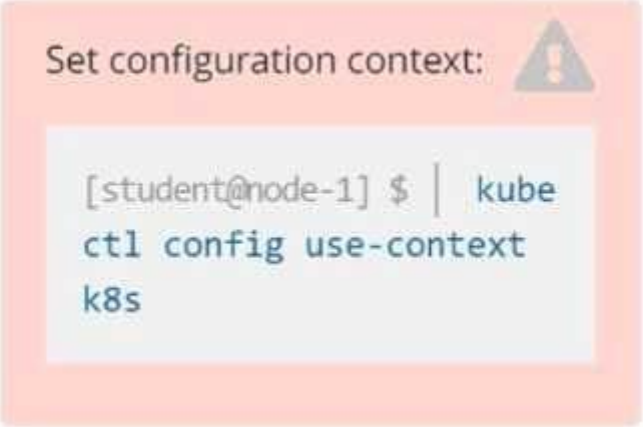
Questions & Answers

(Demo Version - Limited Content)

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

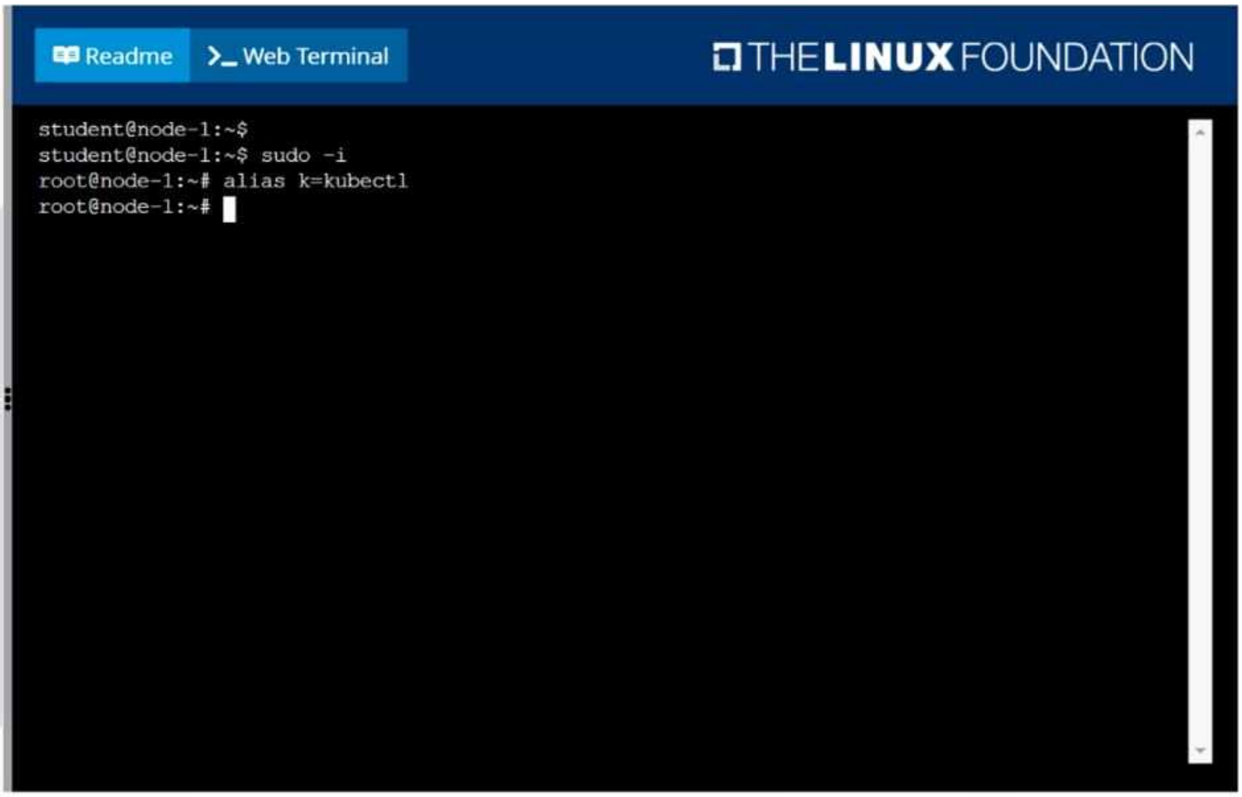


Set configuration context:

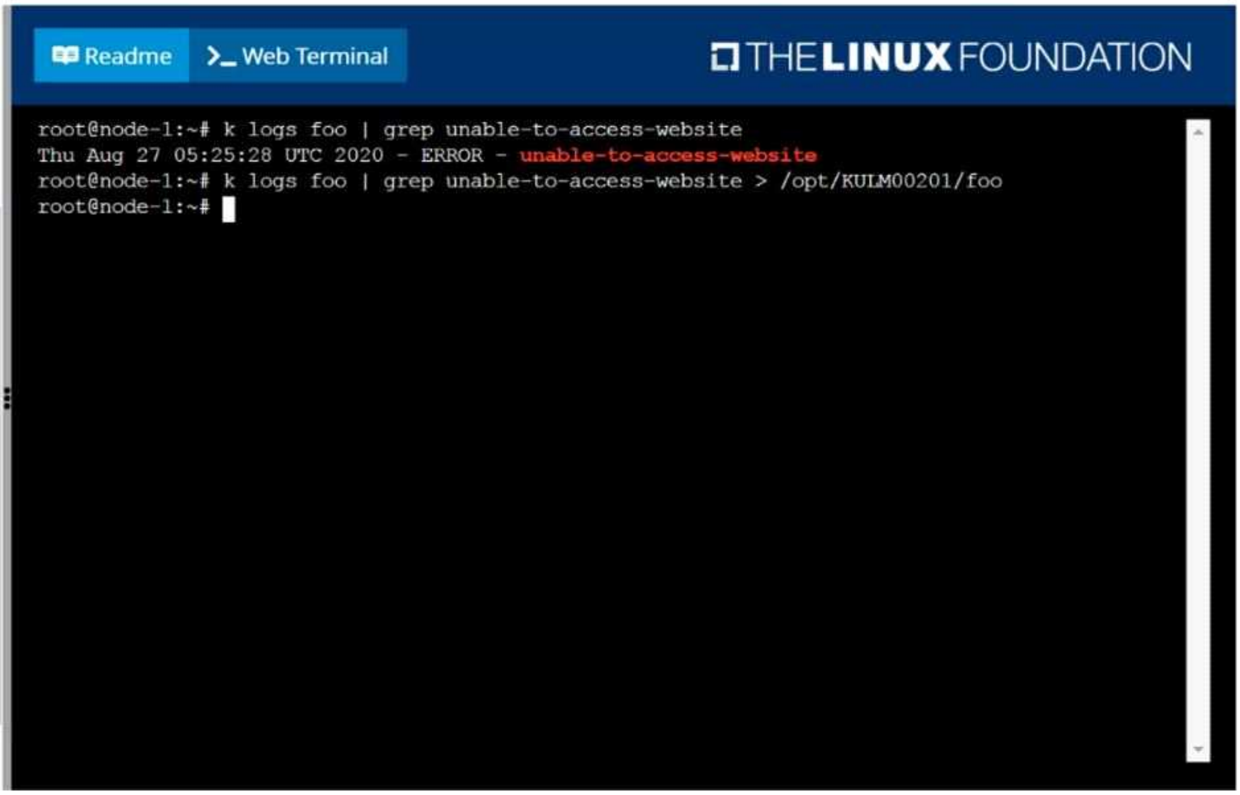
```
[student@node-1] $ | kubectl config use-context k8s
```

Answer: See the solution below.

Explanation:
solution



```
student@node-1:~$
student@node-1:~$ sudo -i
root@node-1:~# alias k=kubectl
root@node-1:~# 
```



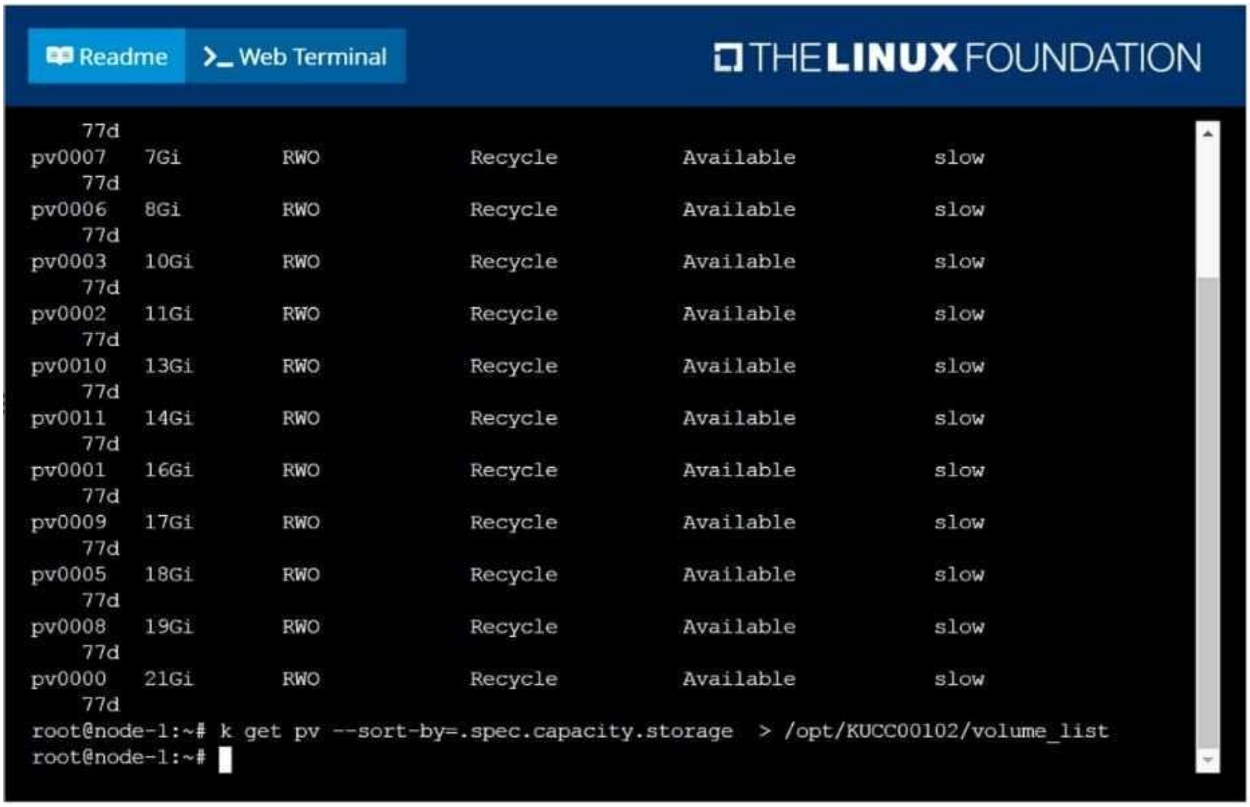
```
root@node-1:~# k logs foo | grep unable-to-access-website
Thu Aug 27 05:25:28 UTC 2020 - ERROR - unable-to-access-website
root@node-1:~# k logs foo | grep unable-to-access-website > /opt/KULM00201/foo
root@node-1:~# 
```

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



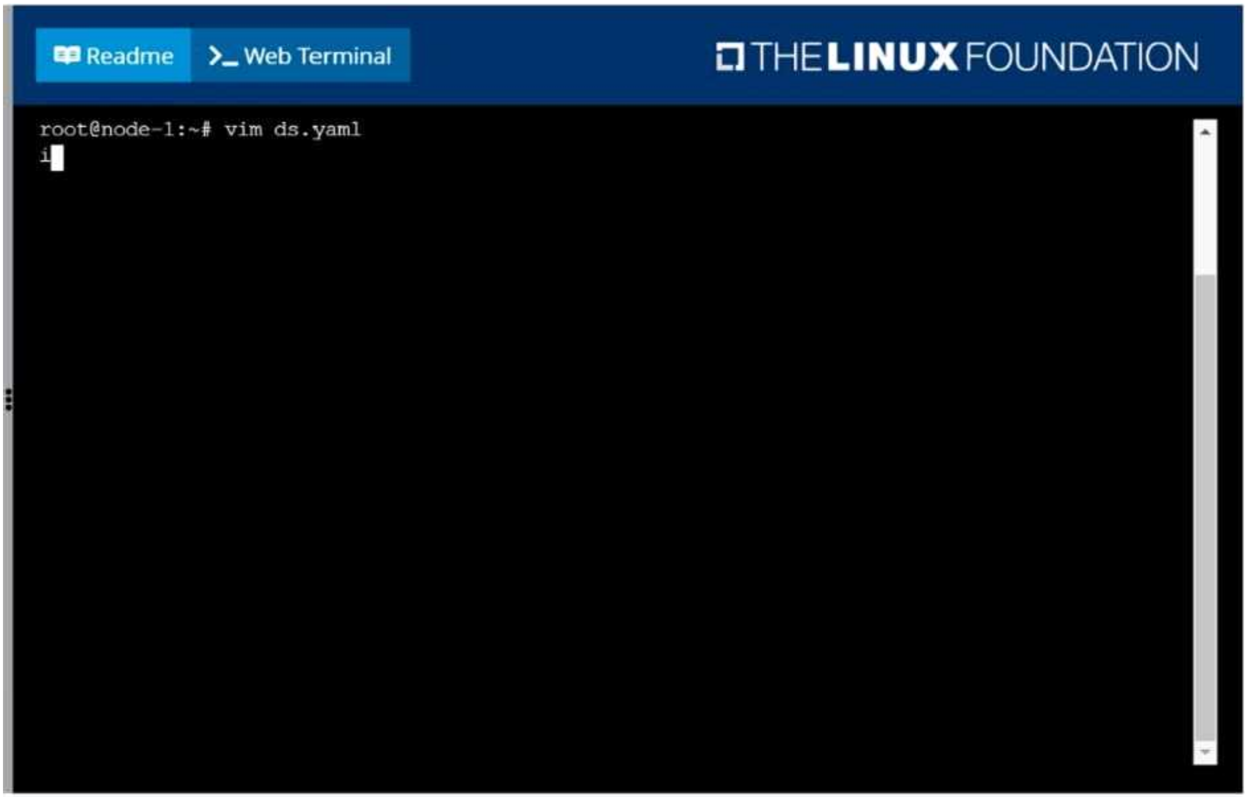
```
    77d
pv0007   7Gi        RWO            Recycle          Available           slow
    77d
pv0006   8Gi        RWO            Recycle          Available           slow
    77d
pv0003   10Gi       RWO            Recycle          Available           slow
    77d
pv0002   11Gi       RWO            Recycle          Available           slow
    77d
pv0010   13Gi       RWO            Recycle          Available           slow
    77d
pv0011   14Gi       RWO            Recycle          Available           slow
    77d
pv0001   16Gi       RWO            Recycle          Available           slow
    77d
pv0009   17Gi       RWO            Recycle          Available           slow
    77d
pv0005   18Gi       RWO            Recycle          Available           slow
    77d
pv0008   19Gi       RWO            Recycle          Available           slow
    77d
pv0000   21Gi       RWO            Recycle          Available           slow
    77d
root@node-1:~# k get pv --sort-by=.spec.capacity.storage  > /opt/KUCC00102/volume_list
root@node-1:~# 
```

Question: 3

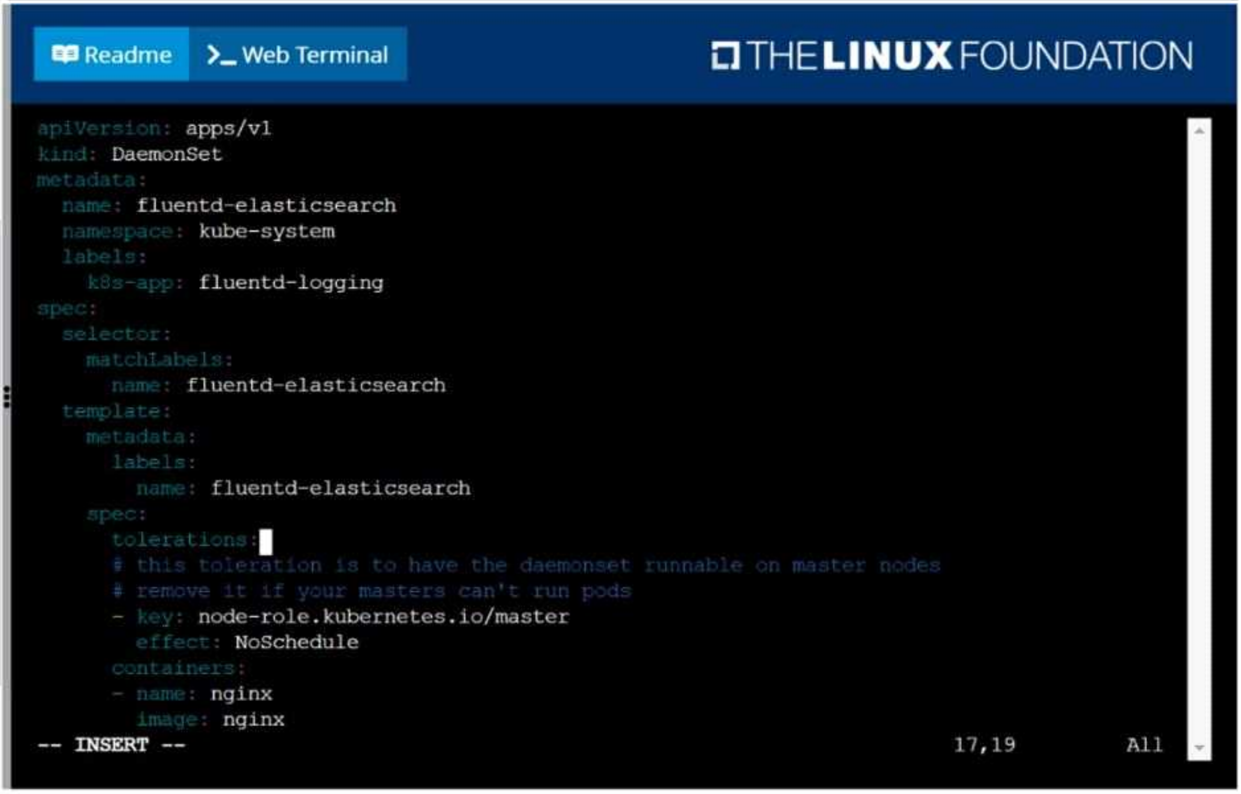
Ensure a single instance of pod nginx is running on each node of the Kubernetes cluster where nginx also represents the Image name which has to be used. Do not override any taints currently in place. Use DaemonSet to complete this task and use ds-kusc00201 as DaemonSet name.

Answer: See the solution below.

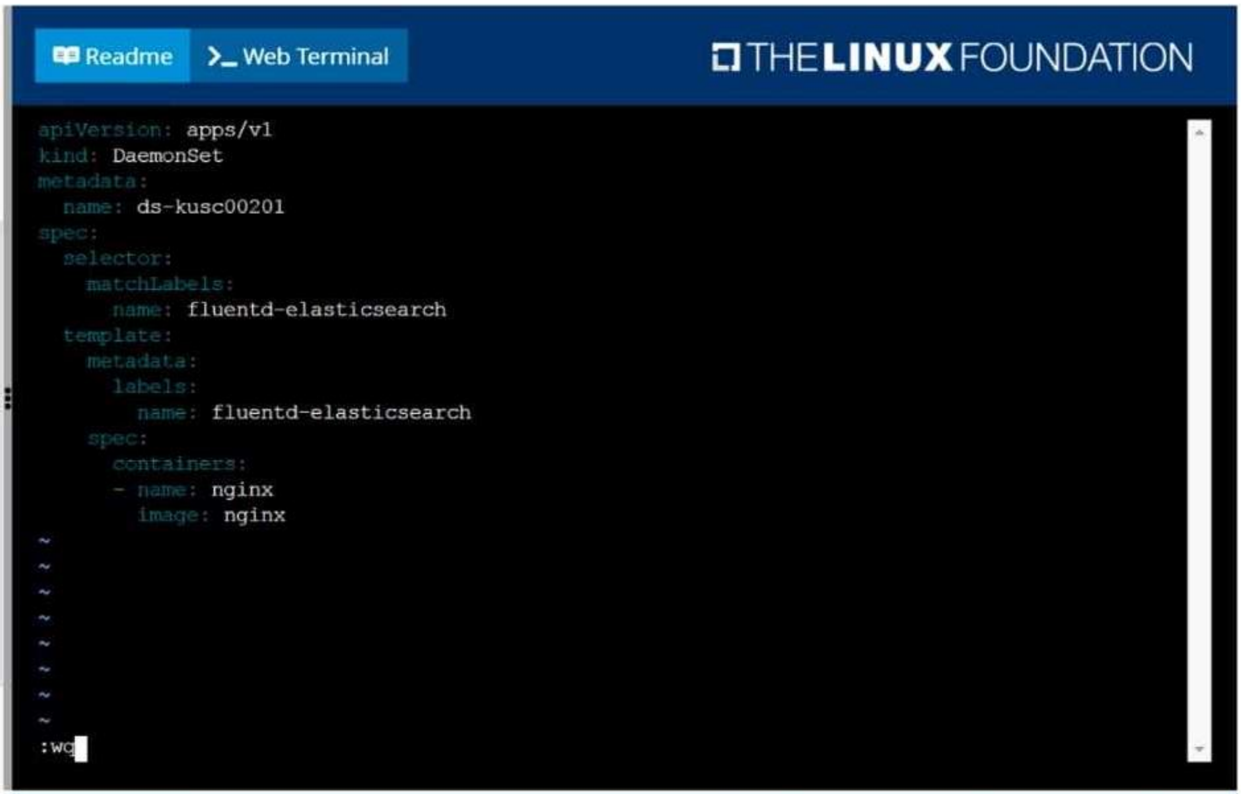
Explanation:
solution



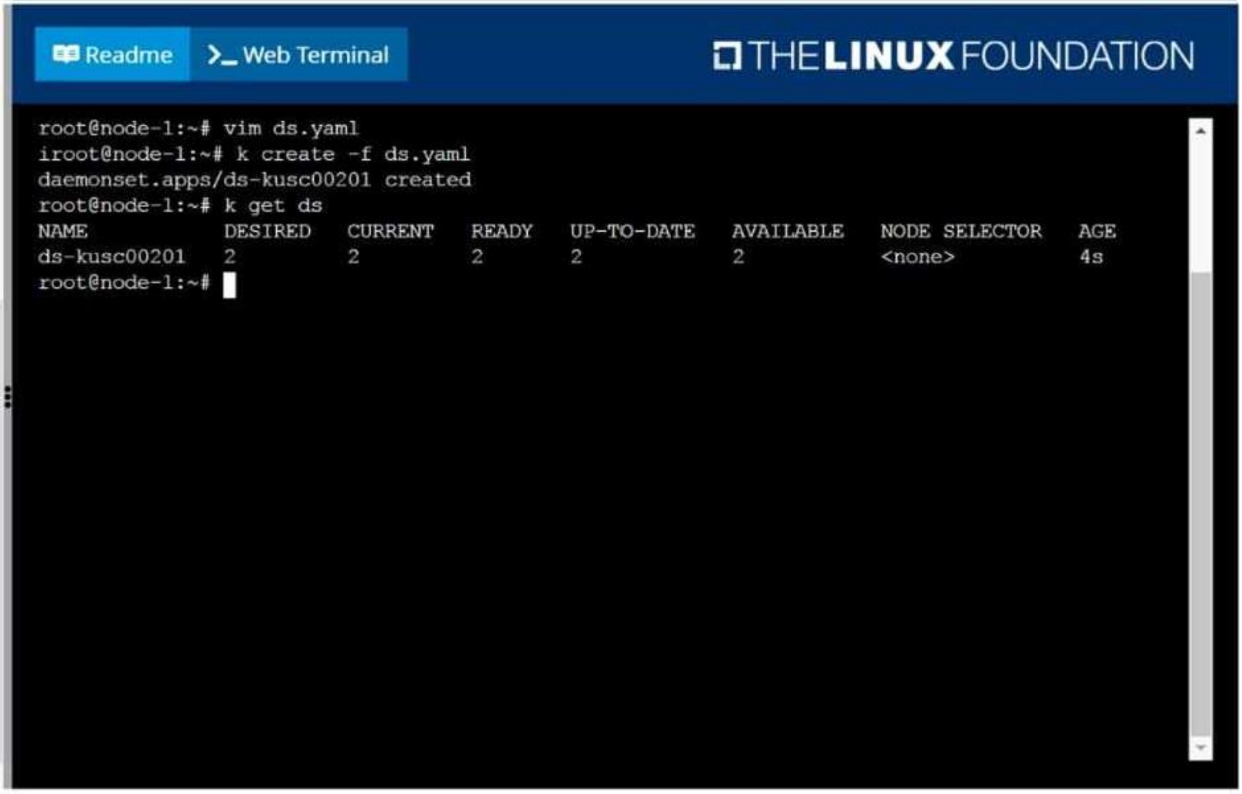
```
root@node-1:~# vim ds.yaml
i
```



```
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
```



```
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
```



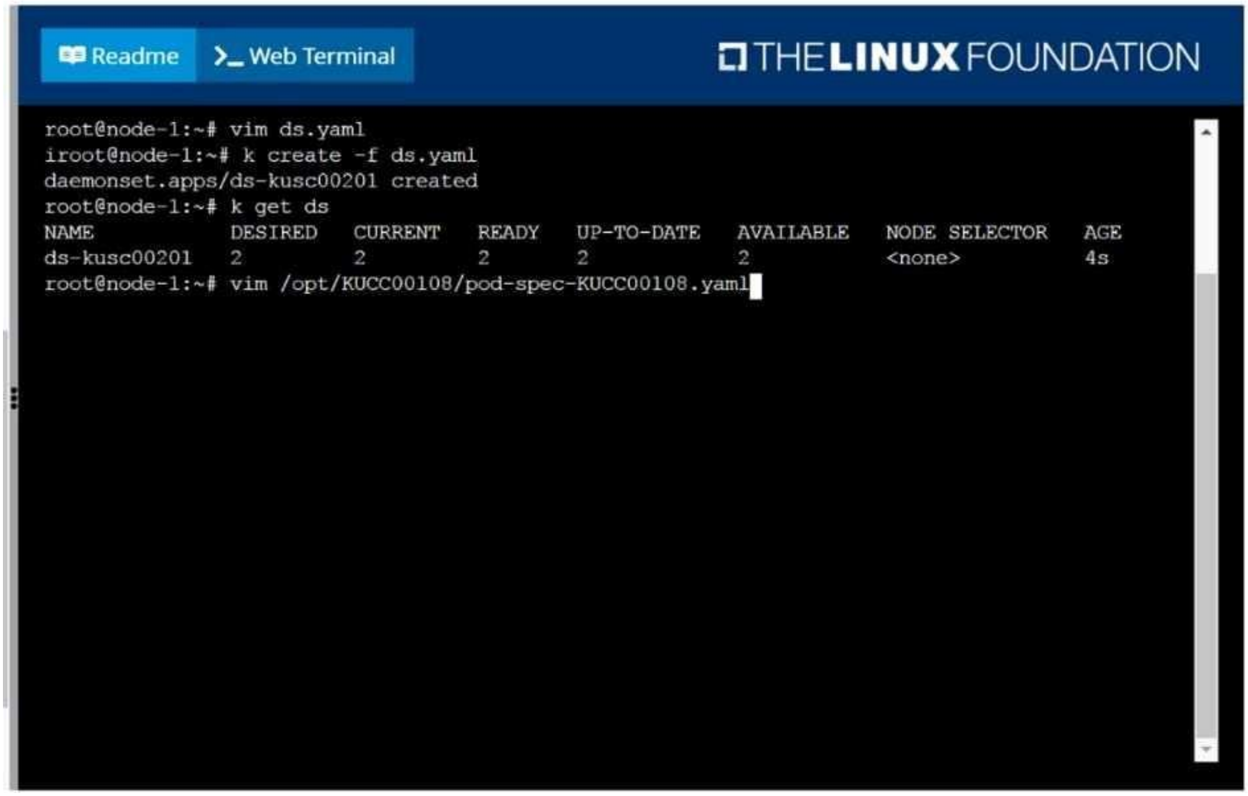
```
root@node-1:~# vim ds.yaml
iroot@node-1:~# k create -f ds.yaml
daemonset.apps/ds-kusc00201 created
root@node-1:~# k get ds
NAME           DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
ds-kusc00201   2         2         2       2            2           <none>          4s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

Question: 4

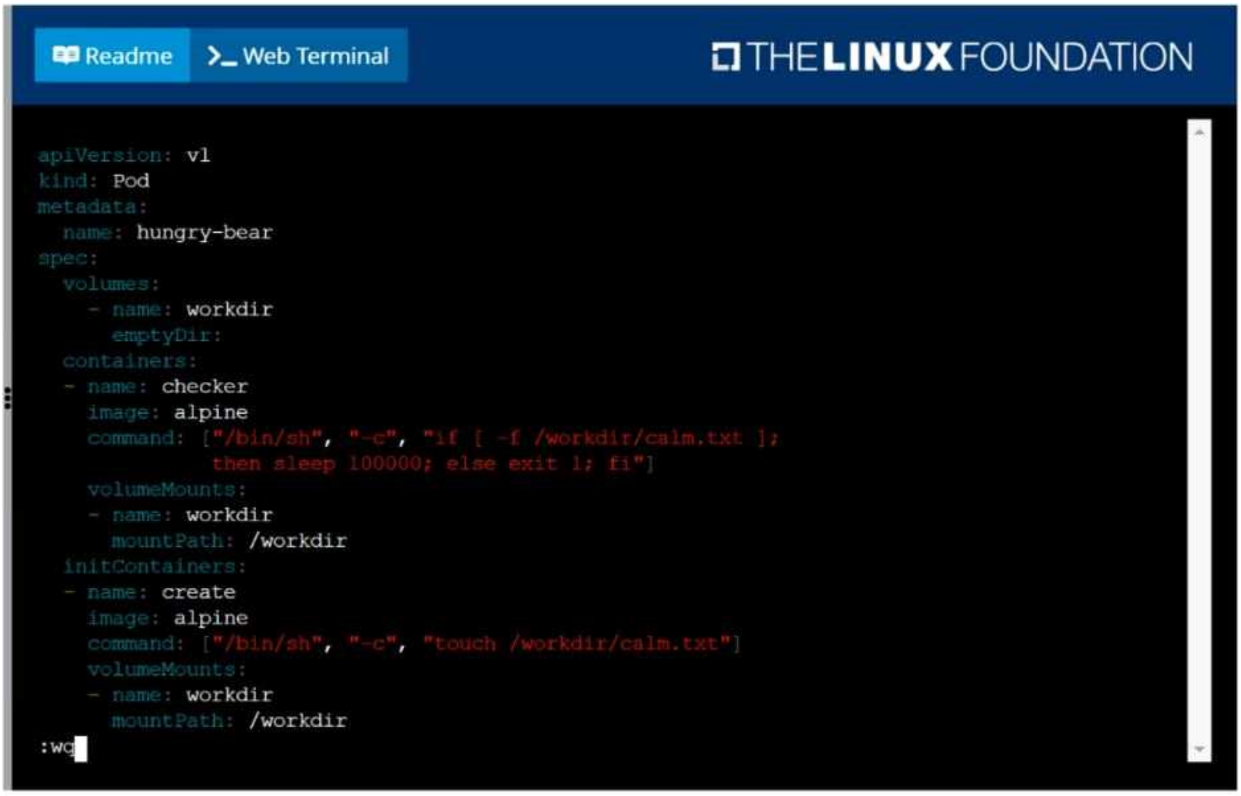
Perform the following tasks:
Add an init container to hungry-bear (which has been defined in spec file /opt/KUCC00108/pod-spec-KUC
C00108.yaml
)
The init container should create an empty file named /workdir/calm.txt
If /workdir/calm.txt is not detected, the pod should exit
Once the spec file has been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

Answer: See the solution below.

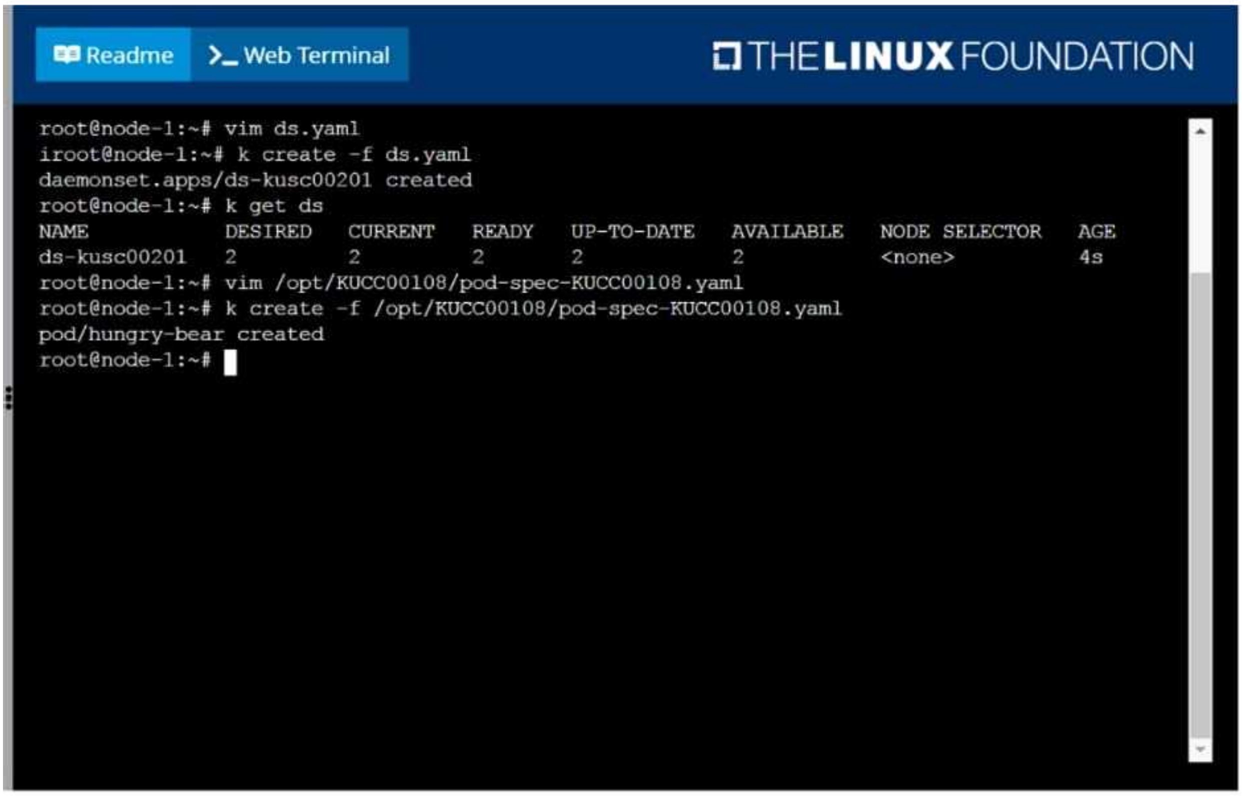
Explanation:
solution



```
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
```



```
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
```



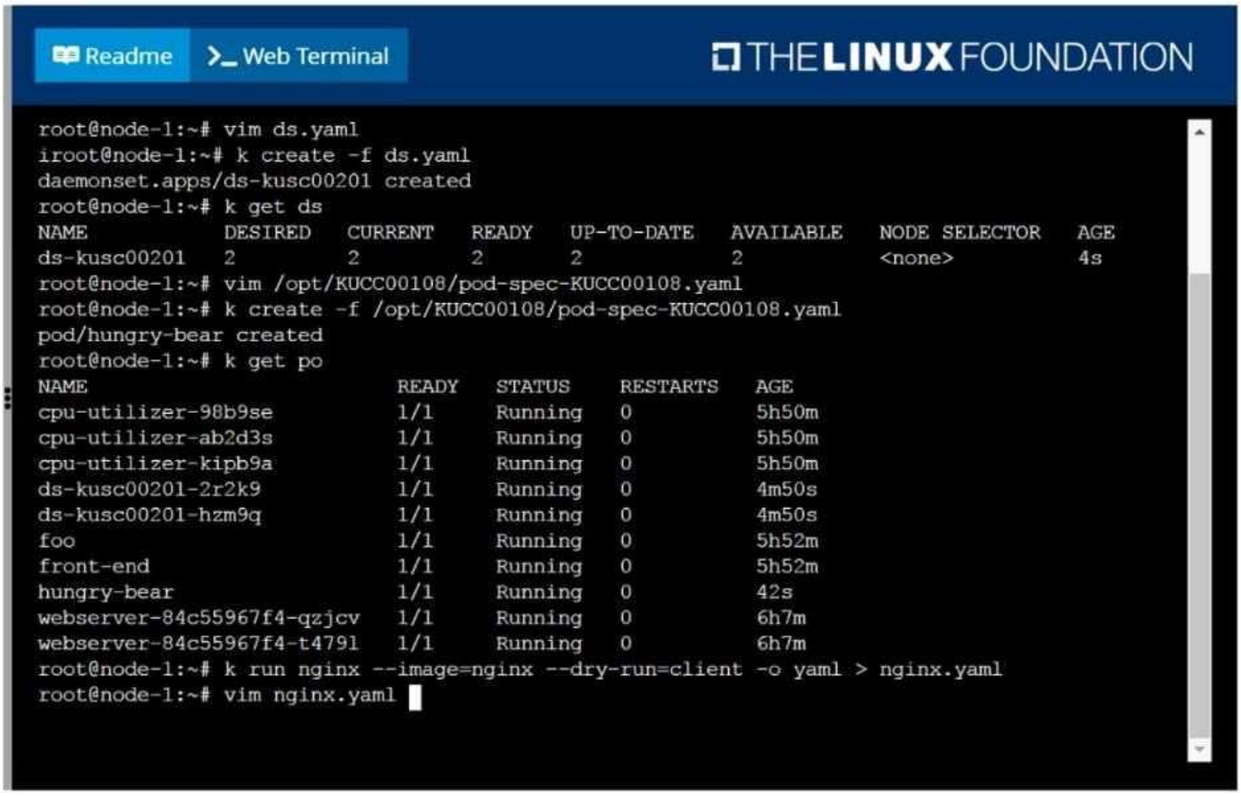
```
root@node-1:~# vim ds.yaml
iroot@node-1:~# k create -f ds.yaml
daemonset.apps/ds-kusc00201 created
root@node-1:~# k get ds
NAME           DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR   AGE
ds-kusc00201   2         2         2       2            2           <none>          4s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

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



```
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
```