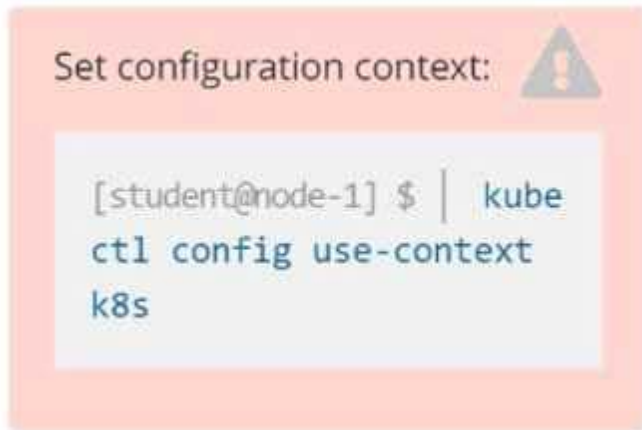


Latest Version: 9.0

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

```
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:~#
```

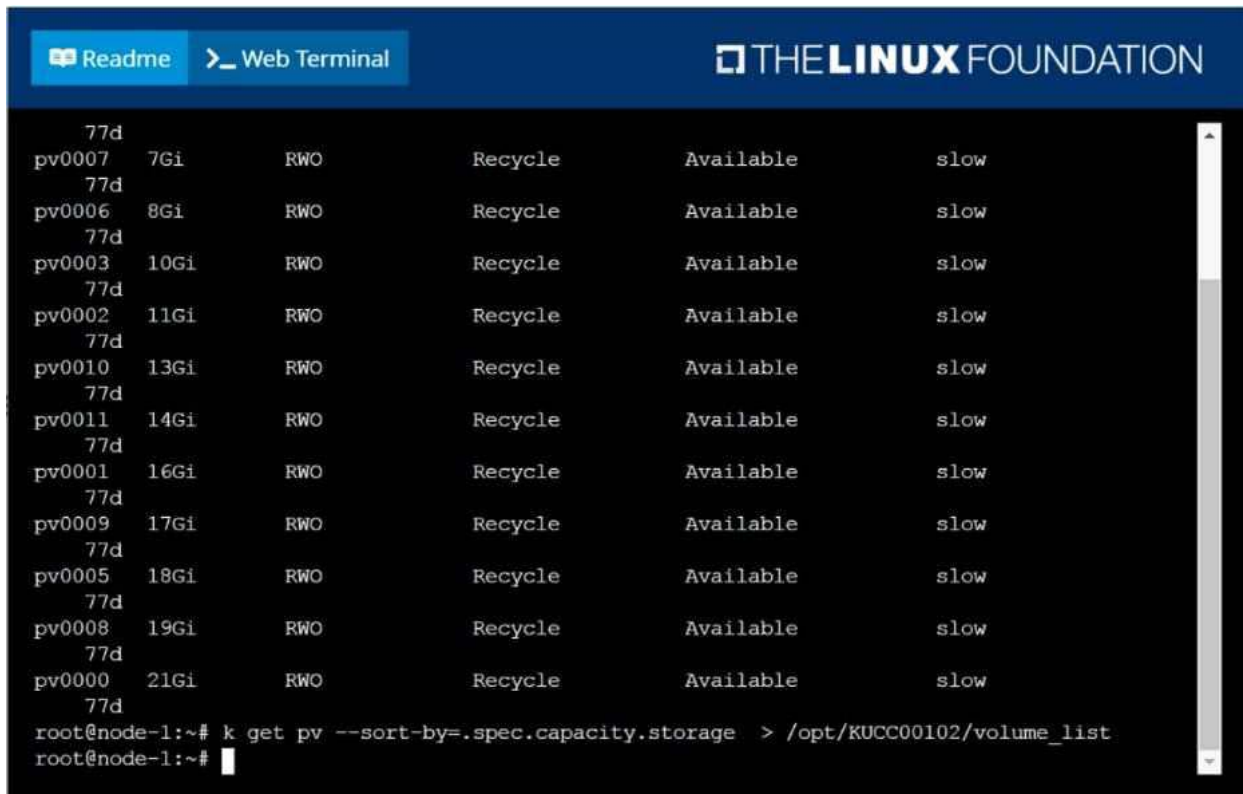
Question: 2

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 --
```

```
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
~
~
~
~
~
~
~
~
~
~
~
:wg
```

```
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

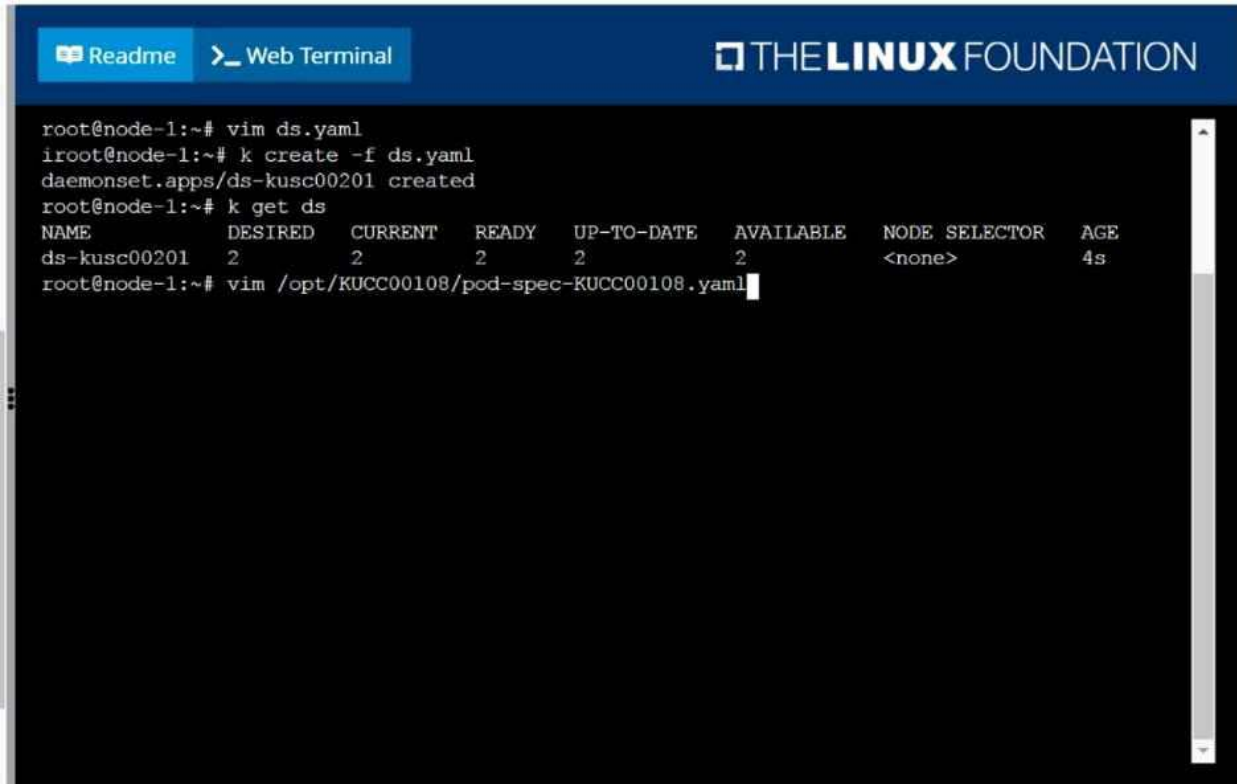
If /workdir/calm.txt is not detected, the pod should exit

Once the spec file has been updated with the init container definition, the pod should be created

Answer: See the solution below.

Explanation:

Solution



The screenshot shows a web terminal interface with a blue header containing 'Readme' and 'Web Terminal' buttons, and 'THE LINUX FOUNDATION' logo. The terminal output shows the following sequence of commands and results:

```
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
:wg
```

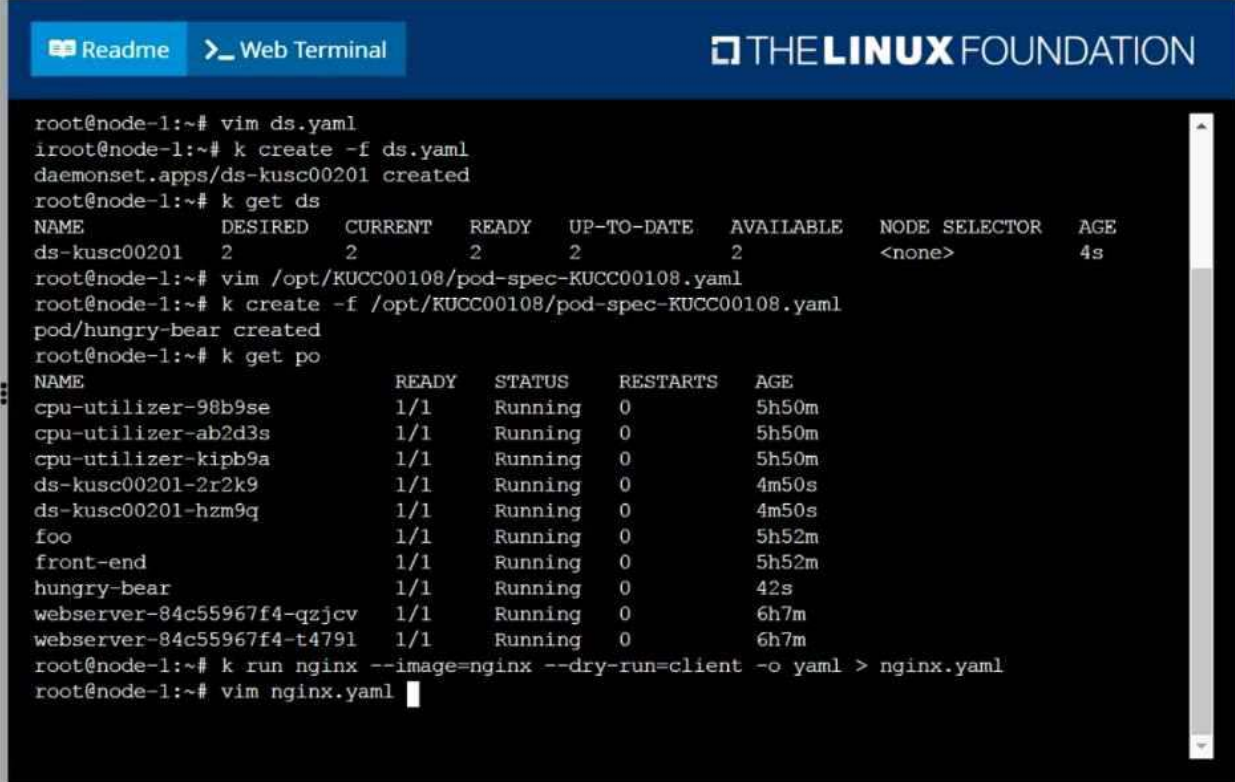
```
root@node-1:~# vim ds.yaml
iroot@node-1:~# k create -f ds.yaml
daemonset.apps/ds-kusc00201 created
root@node-1:~# k get ds
NAME          DESIRED  CURRENT  READY  UP-TO-DATE  AVAILABLE  NODE SELECTOR  AGE
ds-kusc00201  2        2        2      2           2          <none>         4s
root@node-1:~#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

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



The screenshot shows a terminal window with a dark background and a blue header. The header contains a 'Readme' button, a 'Web Terminal' button, and the 'THE LINUX FOUNDATION' logo. The terminal output shows the following commands and results:

```
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-t479l  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
```