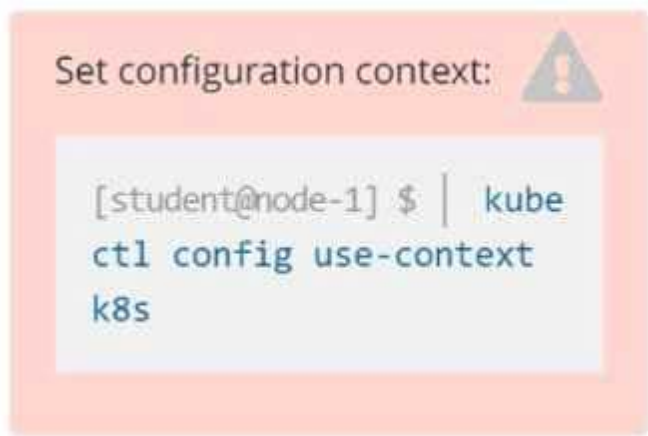


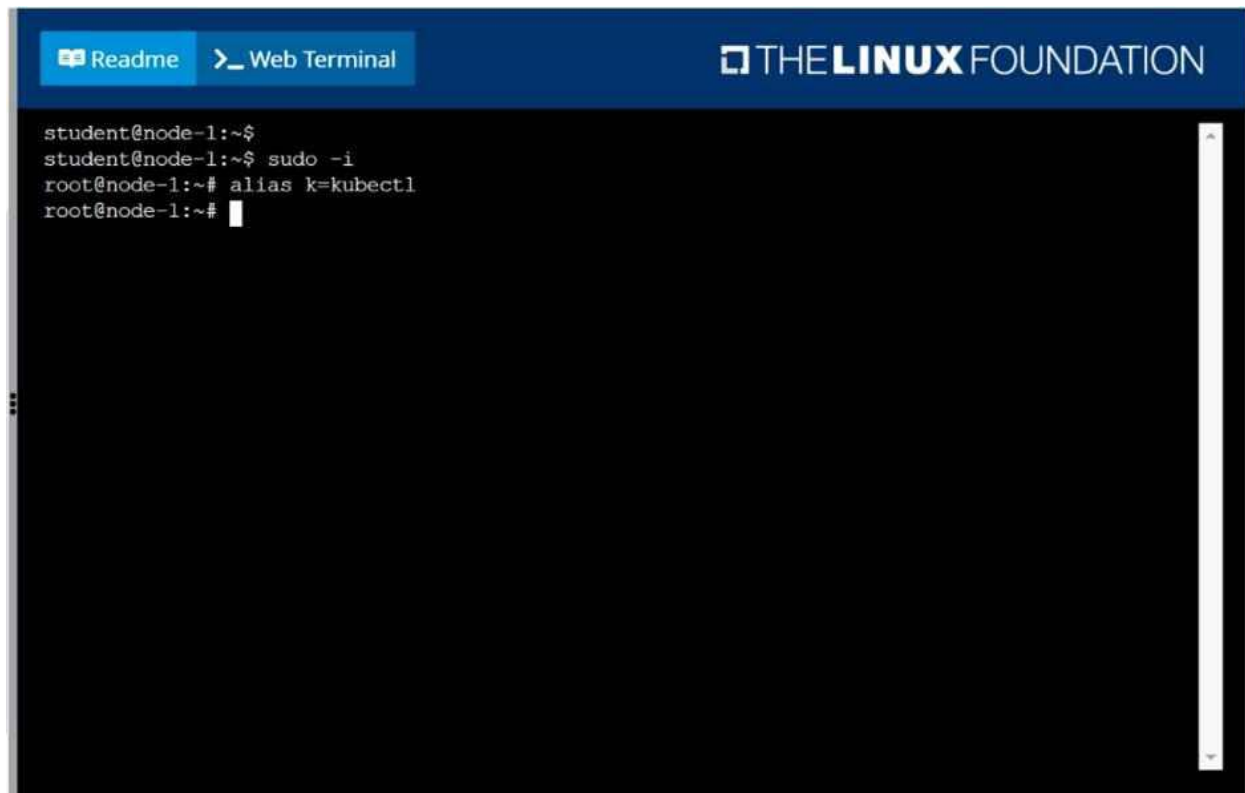
Latest Version: 10.0

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



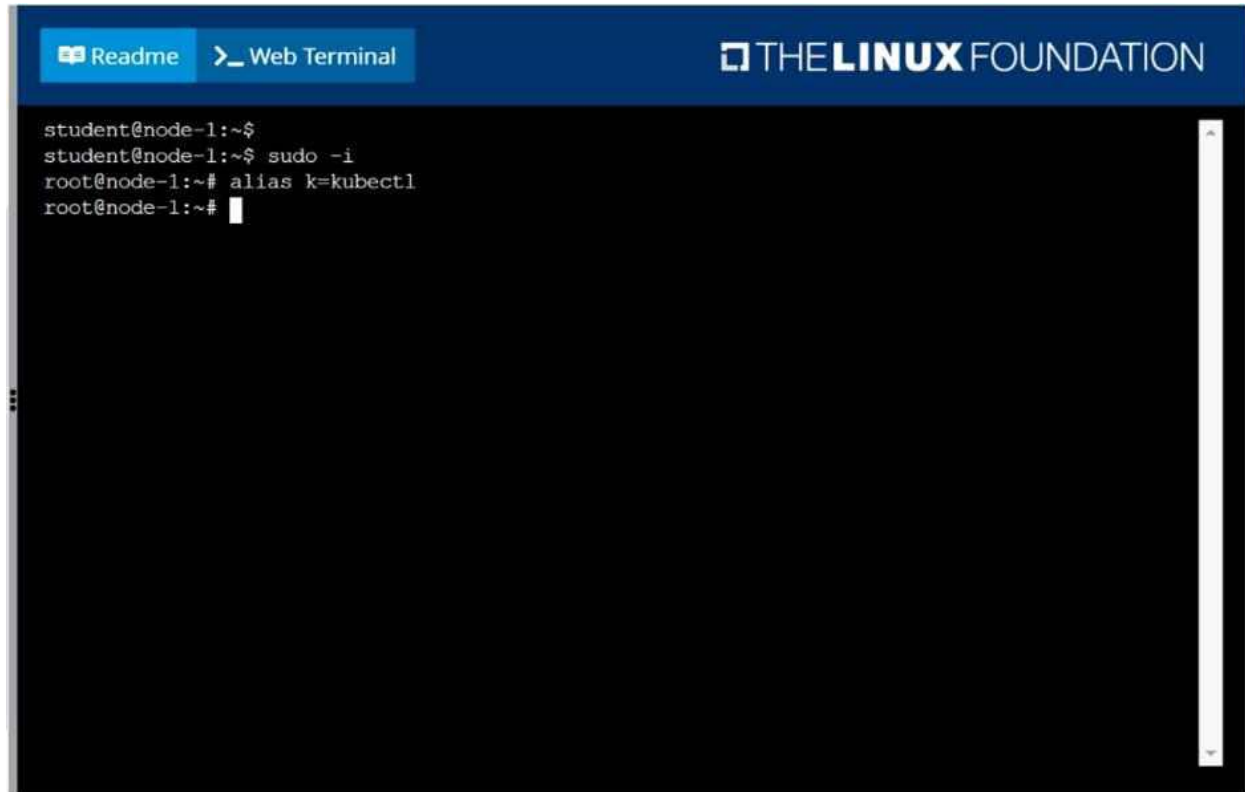
Answer: See the solution below.



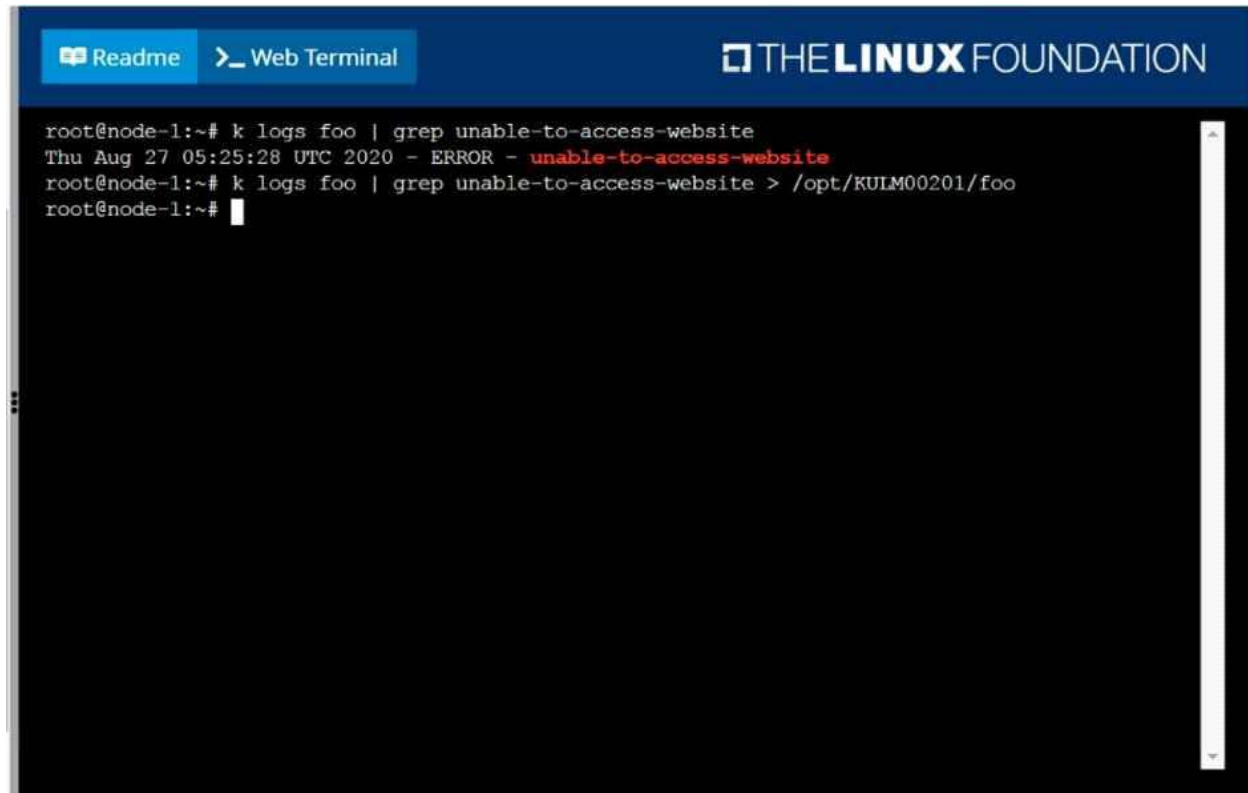
```
student@node-1:~$  
student@node-1:~$ sudo -i  
root@node-1:~# alias k=kubectl  
root@node-1:~#
```

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

Readme

Web Terminal

THE LINUX FOUNDATION

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
~
~
~
~
~
~
~
~
: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:~#
```

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

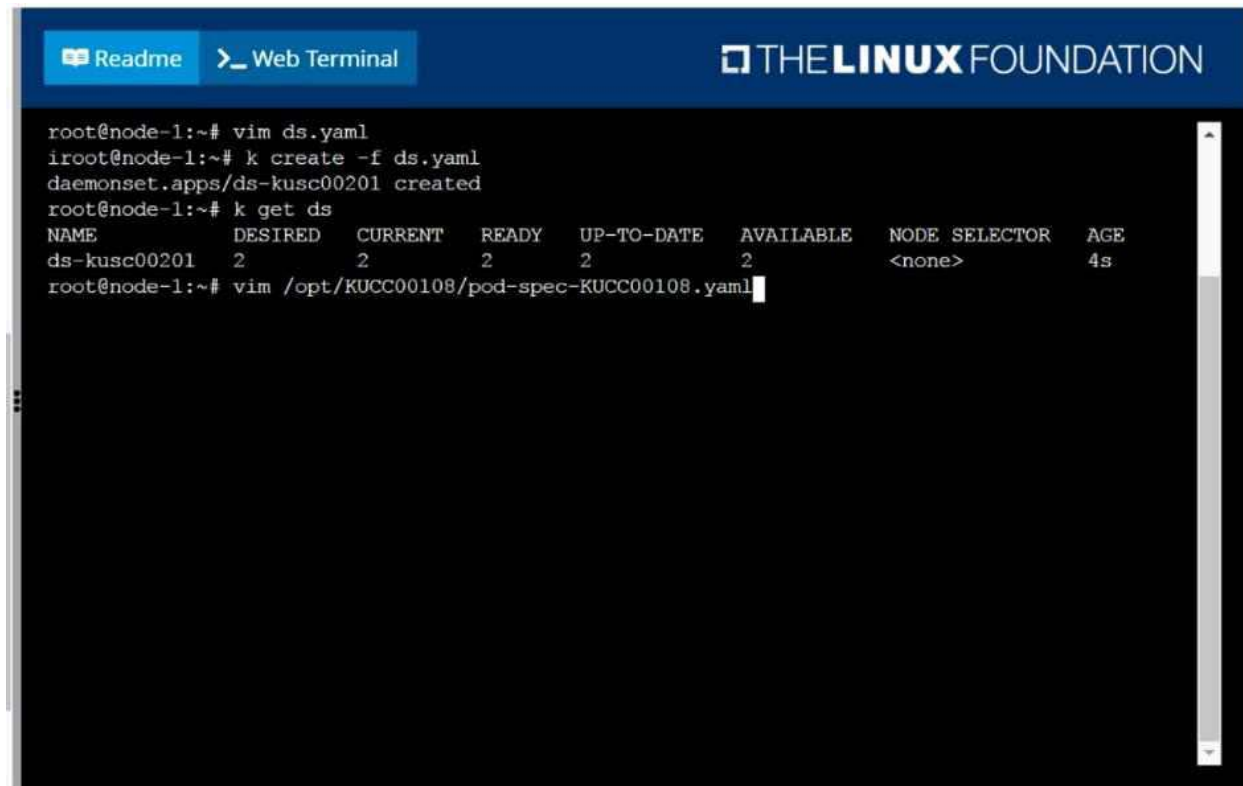
If /workdir/calm.txt is not detected, the pod should exit

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 bar containing 'Readme' and 'Web Terminal' tabs, 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
:wc
```

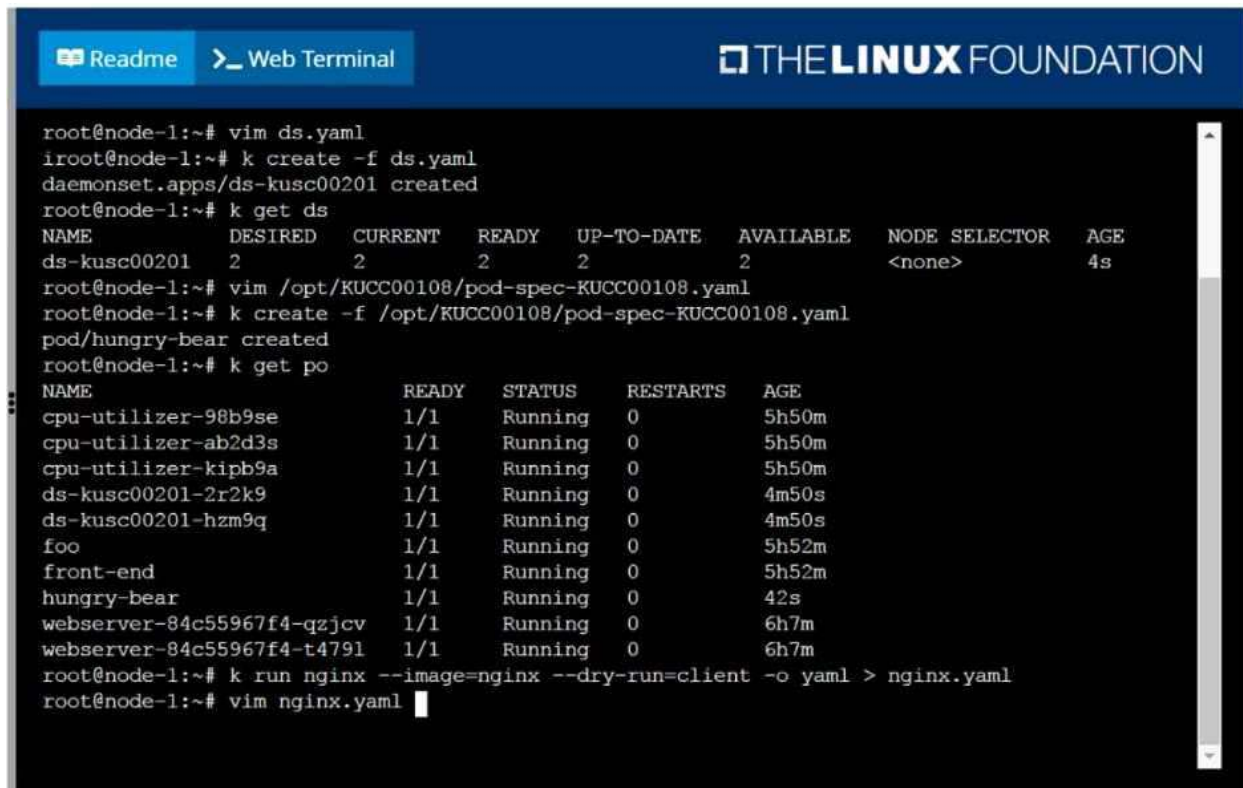
```
root@node-1:~# vim ds.yaml
iroot@node-1:~# k create -f ds.yaml
daemonset.apps/ds-kusc00201 created
root@node-1:~# k get ds
NAME          DESIRED  CURRENT  READY  UP-TO-DATE  AVAILABLE  NODE SELECTOR  AGE
ds-kusc00201  2        2        2      2           2          <none>         4s
root@node-1:~# 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. At the top, there are tabs for 'Readme' and 'Web Terminal', and the 'THE LINUX FOUNDATION' logo on the right. The terminal content shows a series of commands and their outputs:

```
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
```

```
apiVersion: v1
kind: Pod
metadata:
  name: kucc8
spec:
  containers:
  - image: nginx
    name: nginx
  - image: redis
    name: redis
  - image: memcached
    name: memcached
```

```

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-t479l	1/1	Running	0	6h9m