

# Linux-Foundation

## Exam Questions CKA

Certified Kubernetes Administrator (CKA) Program



#### NEW QUESTION 1

CORRECT TEXT

List all the pods sorted by name

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

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

#### NEW QUESTION 2

CORRECT TEXT

Create a pod with image nginx called nginx and allow traffic on port 80

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

kubectl run nginx --image=nginx --restart=Never --port=80

#### NEW QUESTION 3

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 4

CORRECT TEXT

Create a Kubernetes secret as follows:

? Name: super-secret

? password: bob

Create a pod named pod-secrets-via-file, using the redis Image, which mounts a secret named super-secret at /secrets.

Create a second pod named pod-secrets-via-env, using the redis Image, which exports

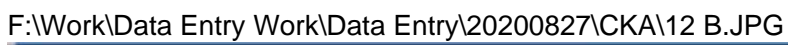
password as CONFIDENTIAL

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

solution



ReadmeWeb Terminal

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```
root@node-1:~# k create -f secret.yaml
pod/pod-secrets-via-file created
root@node-1:~# vim secret1.yaml
root@node-1:~# k create -f secret1.yaml
pod/pod-secrets-via-env created
root@node-1:~# k get po
NAME                                READY   STATUS    RESTARTS   AGE
cpu-utilizer-98b9se                 1/1     Running   0           6h25m
cpu-utilizer-ab2d3s                 1/1     Running   0           6h25m
cpu-utilizer-kipb9a                 1/1     Running   0           6h25m
ds-kusc00201-2r2k9                  1/1     Running   0           40m
ds-kusc00201-hzm9q                  1/1     Running   0           40m
foo                                  1/1     Running   0           6h28m
front-end                           1/1     Running   0           6h27m
hungry-bear                         1/1     Running   0           36m
kucc8                                3/3     Running   0           34m
nginx-app-848cfcf495-9prjh          1/1     Running   0           19m
nginx-app-848cfcf495-gl2kh          1/1     Running   0           19m
nginx-app-848cfcf495-pg2c8          1/1     Running   0           19m
nginx-kusc00101                     1/1     Running   0           26m
pod-secrets-via-env                 1/1     Running   0           4s
pod-secrets-via-file                1/1     Running   0           106s
webserver-84c55967f4-qzjcv          1/1     Running   0           6h43m
webserver-84c55967f4-t479l          1/1     Running   0           6h43m
root@node-1:~#
```

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NEW QUESTION 5

CORRECT TEXT

Create and configure the service front-end-service so it's accessible through NodePort and routes to the existing pod named front-end.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:  
solution

ReadmeWeb Terminal

THELINUXFOUNDATION

```
root@node-1:~# k expose po
error: resource(s) were provided, but no name, label selector, or --all flag specified
See 'kubectl expose -h' for help and examples
root@node-1:~# k expose po fron-end --name=front-end-service --port=80 --target-port=80 --t
ype=NodePort
Error from server (NotFound): pods "fron-end" not found
root@node-1:~# k expose po front-end --name=front-end-service --port=80 --target-port=80 --
type=NodePort
service/front-end-service exposed
root@node-1:~# k get svc
NAME                                TYPE                CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
front-end-service                   NodePort            10.103.221.227  <none>           80:31828/TCP     3s
kubernetes                          ClusterIP           10.96.0.1       <none>           443/TCP          77d
root@node-1:~#
```

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NEW QUESTION 6

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 7**

CORRECT TEXT

Print pod name and start time to “/opt/pod-status” file

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

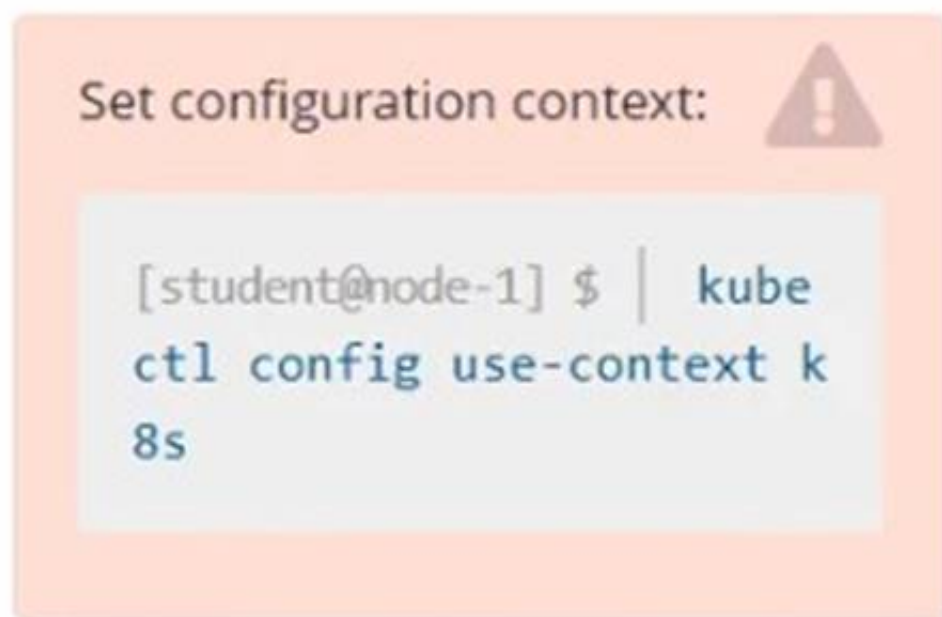
kubect1 get pods -o=jsonpath='{range

items[\*]}{.metadata.name}{"\t"}{.status.podIP}{"\n"}{end}'

**NEW QUESTION 8**

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

#

kubect1 create -f node-select.yaml

**NEW QUESTION 9**

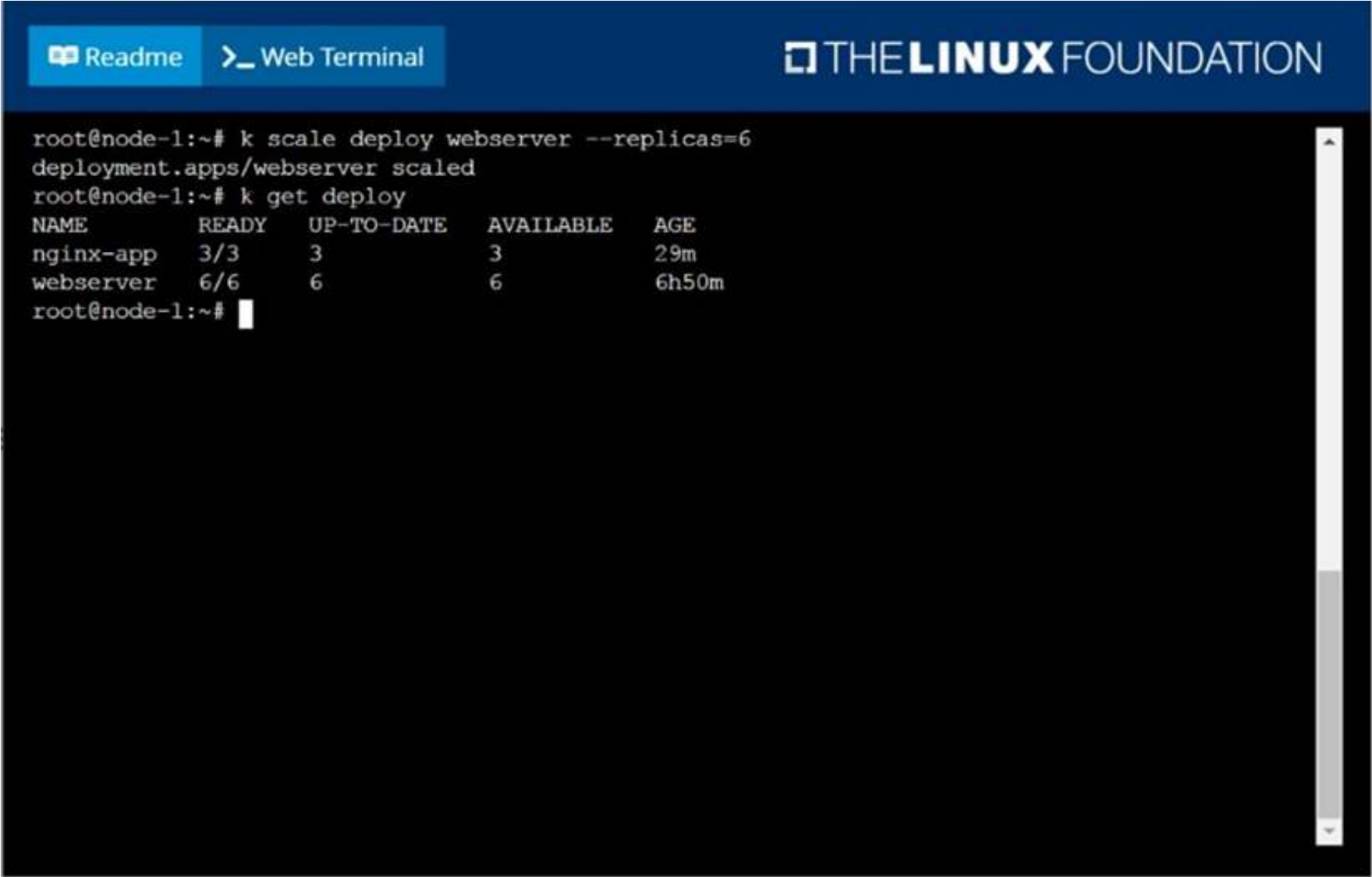


CORRECT TEXT  
Scale the deployment webserver to 6 pods.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:  
solution



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NEW QUESTION 10  
CORRECT TEXT  
Score: 7%

No configuration context change required for this task.

Ensure, however, that you have returned to the base node before starting to work on this task:

```
[student@mk8s-master-0] |
$
exit
```

#### Task

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

Creating a snapshot of the given instance is expected to complete in seconds. If the operation seems to hang, something's likely wrong with your command. Use **CTRL + C** to cancel the operation and try again.

Next, restore an existing, previous snapshot located at `/var/lib/backup/etcd-snapshot-previo us.db`

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

- CA certificate:  
`/opt/KUIN00601/ca.crt`
- Client certificate:  
`/opt/KUIN00601/etcd-client.crt`
- Client key:  
`/opt/KUIN00601/etcd-client.key`

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

Solution:

`#backup`

`ETCDCTL_API=3 etcdctl --endpoints="https://127.0.0.1:2379" --`

`cacert=/opt/KUIN000601/ca.crt --cert=/opt/KUIN000601/etcd-client.crt -- key=/opt/KUIN000601/etcd-client.key snapshot save /etc/data/etcd-snapshot.db`

`#restore`

`ETCDCTL_API=3 etcdctl --endpoints="https://127.0.0.1:2379" --`

`cacert=/opt/KUIN000601/ca.crt --cert=/opt/KUIN000601/etcd-client.crt -- key=/opt/KUIN000601/etcd-client.key snapshot restore /var/lib/backup/etcd-snapshot-previoys.db`

#### NEW QUESTION 10

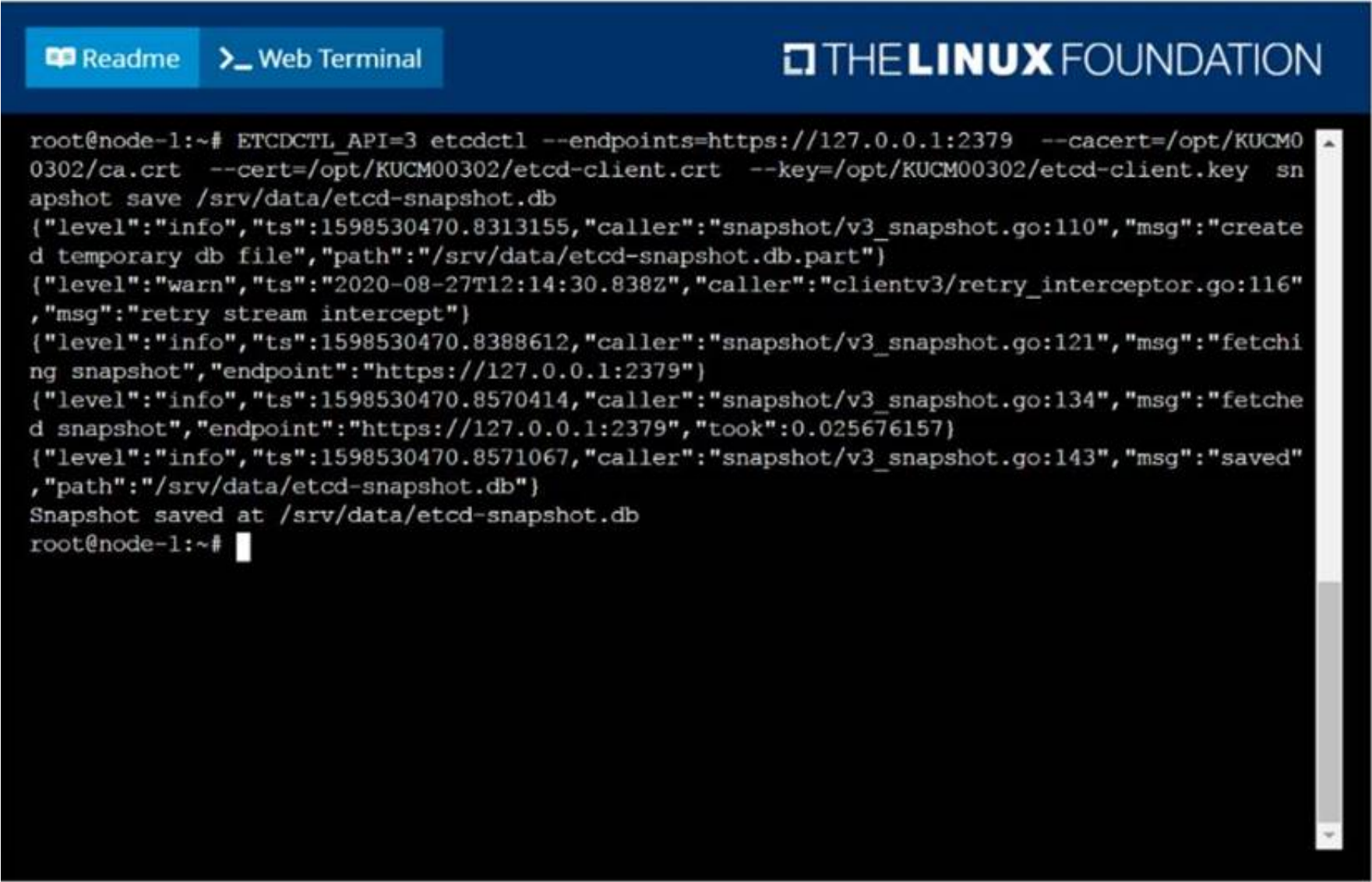
CORRECT TEXT

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



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**NEW QUESTION 12**

CORRECT TEXT

Score: 7%



**Task**  
 Reconfigure the existing deployment front-end and add a port specification named `http` exposing port `80/tcp` of the existing container `nginx`.  
 Create a new service named `front-end-svc` exposing the container port `http`.  
 Configure the new service to also expose the individual Pods via a NodePort on the nodes on which they are scheduled.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**  
 Solution:



```
kubectl get deploy front-end
kubectl edit deploy front-end -o yaml
#port specification named http
#service.yaml
apiVersion: v1
kind: Service
metadata:
name: front-end-svc
labels:
app: nginx
spec:
ports:
- port: 80
protocol: tcp
name: http
selector:
app: nginx
type: NodePort
# kubectl create -f service.yaml
# kubectl get svc
# port specification named http
kubectl expose deployment front-end --name=front-end-svc --port=80 --target-port=80 -- type=NodePort
```

#### NEW QUESTION 17

CORRECT TEXT

Create a file:

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

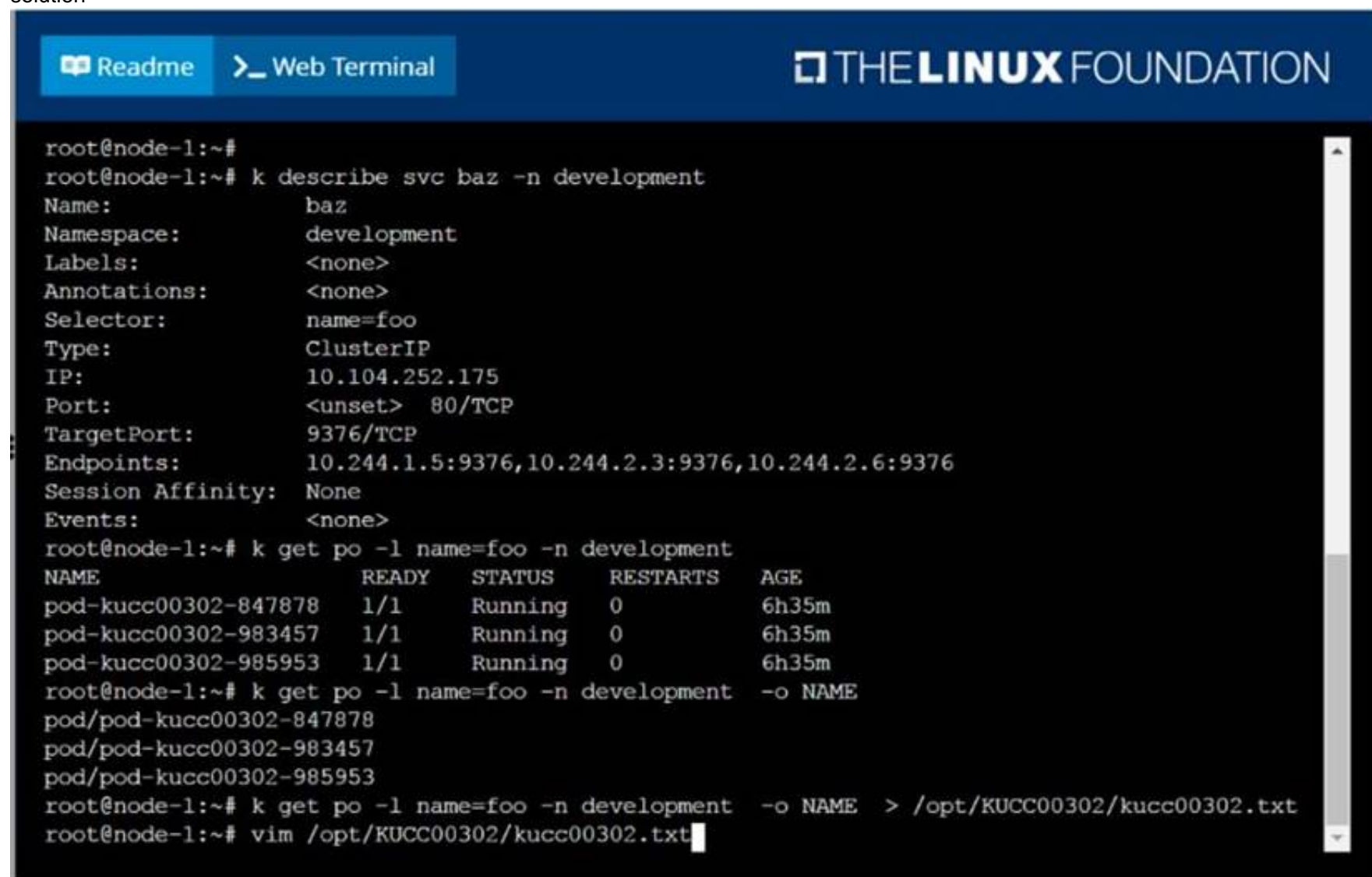
The format of the file should be one pod name per line.

- A. Mastered
- B. Not Mastered

**Answer:** A

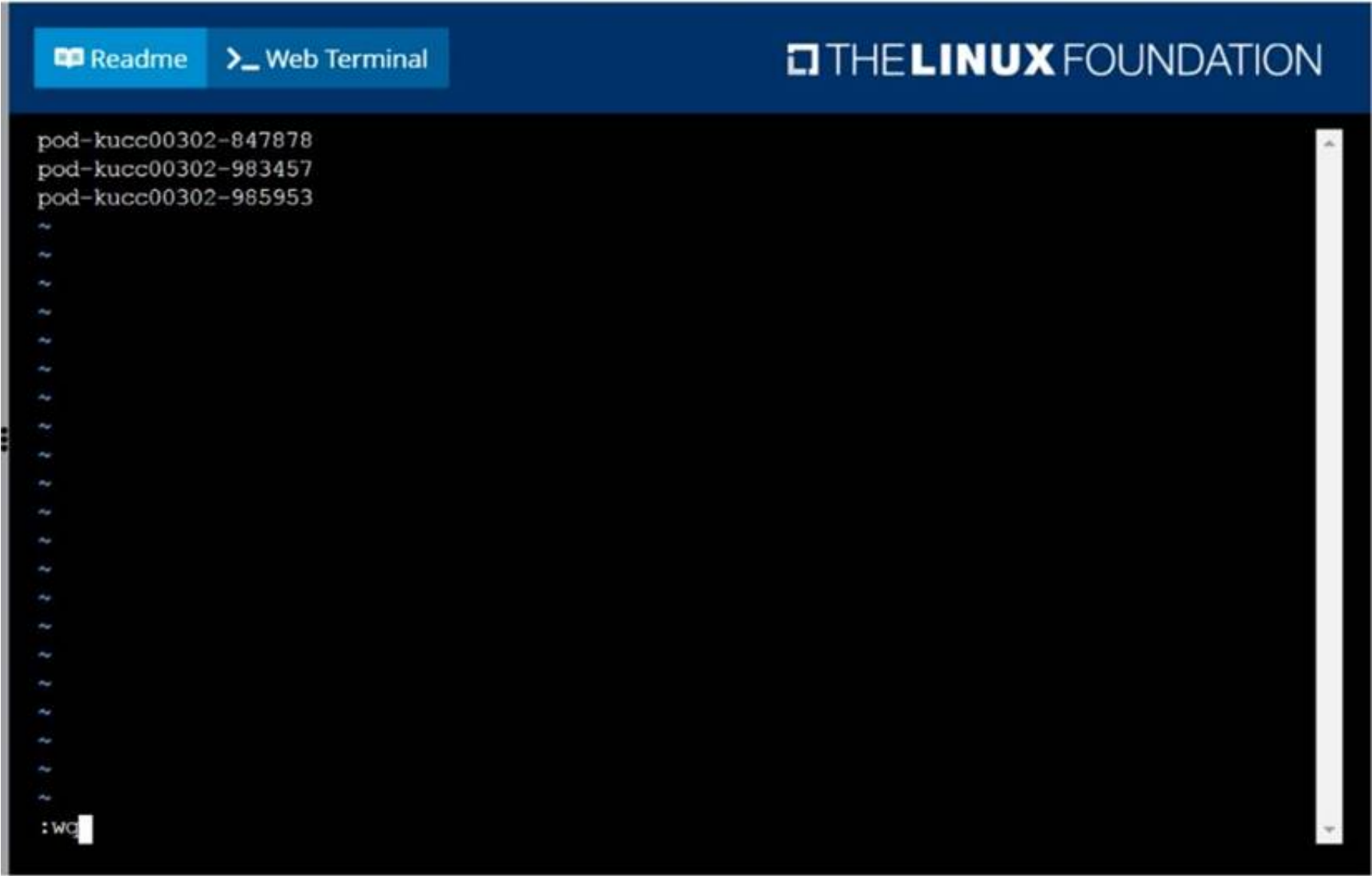
**Explanation:**

solution

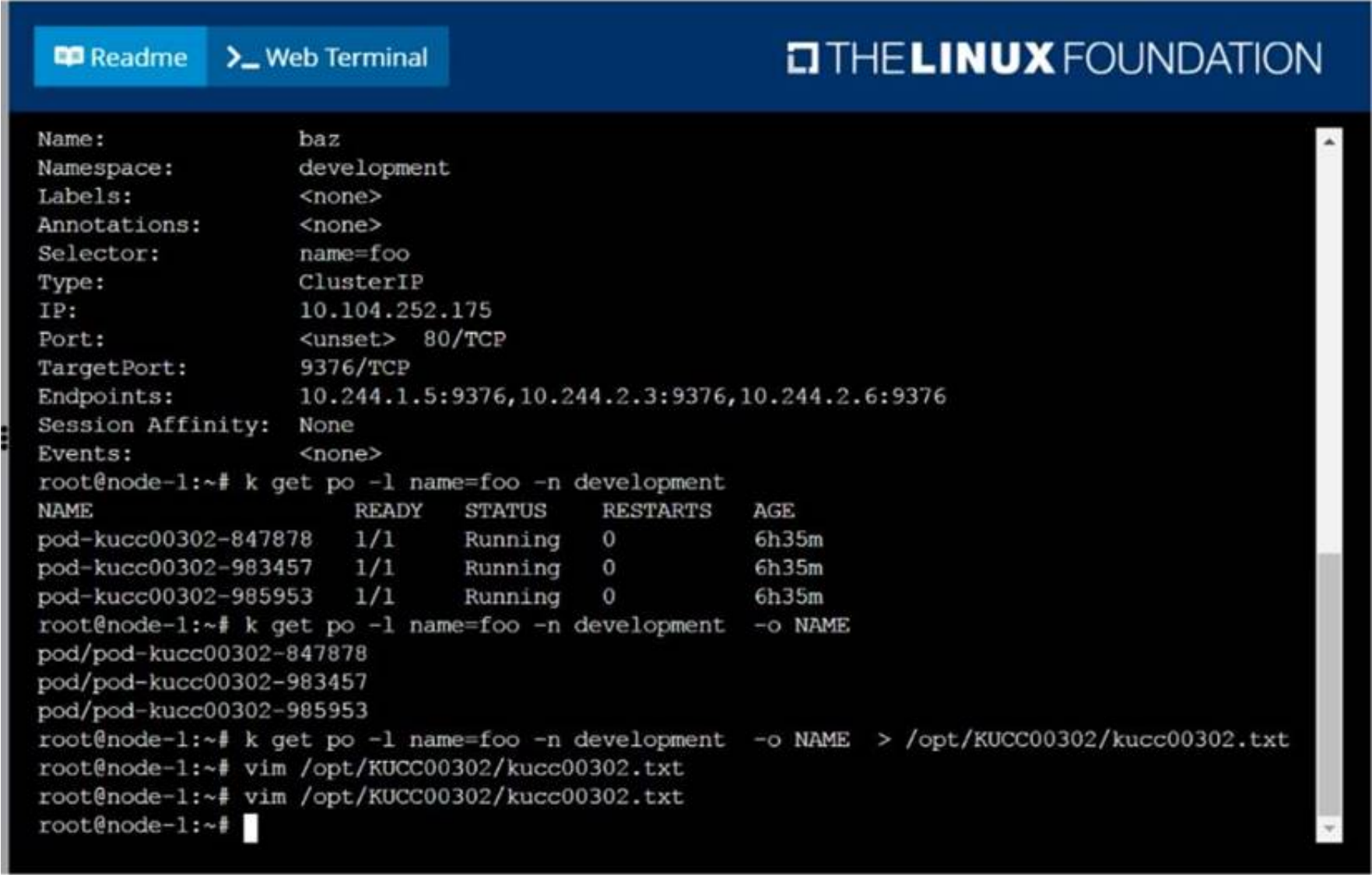


```
root@node-1:~#
root@node-1:~# k describe svc baz -n development
Name:          baz
Namespace:     development
Labels:        <none>
Annotations:   <none>
Selector:      name=foo
Type:          ClusterIP
IP:            10.104.252.175
Port:          <unset> 80/TCP
TargetPort:    9376/TCP
Endpoints:     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 > /opt/KUCC00302/kucc00302.txt
root@node-1:~# vim /opt/KUCC00302/kucc00302.txt
```

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**NEW QUESTION 18**

**CORRECT TEXT**

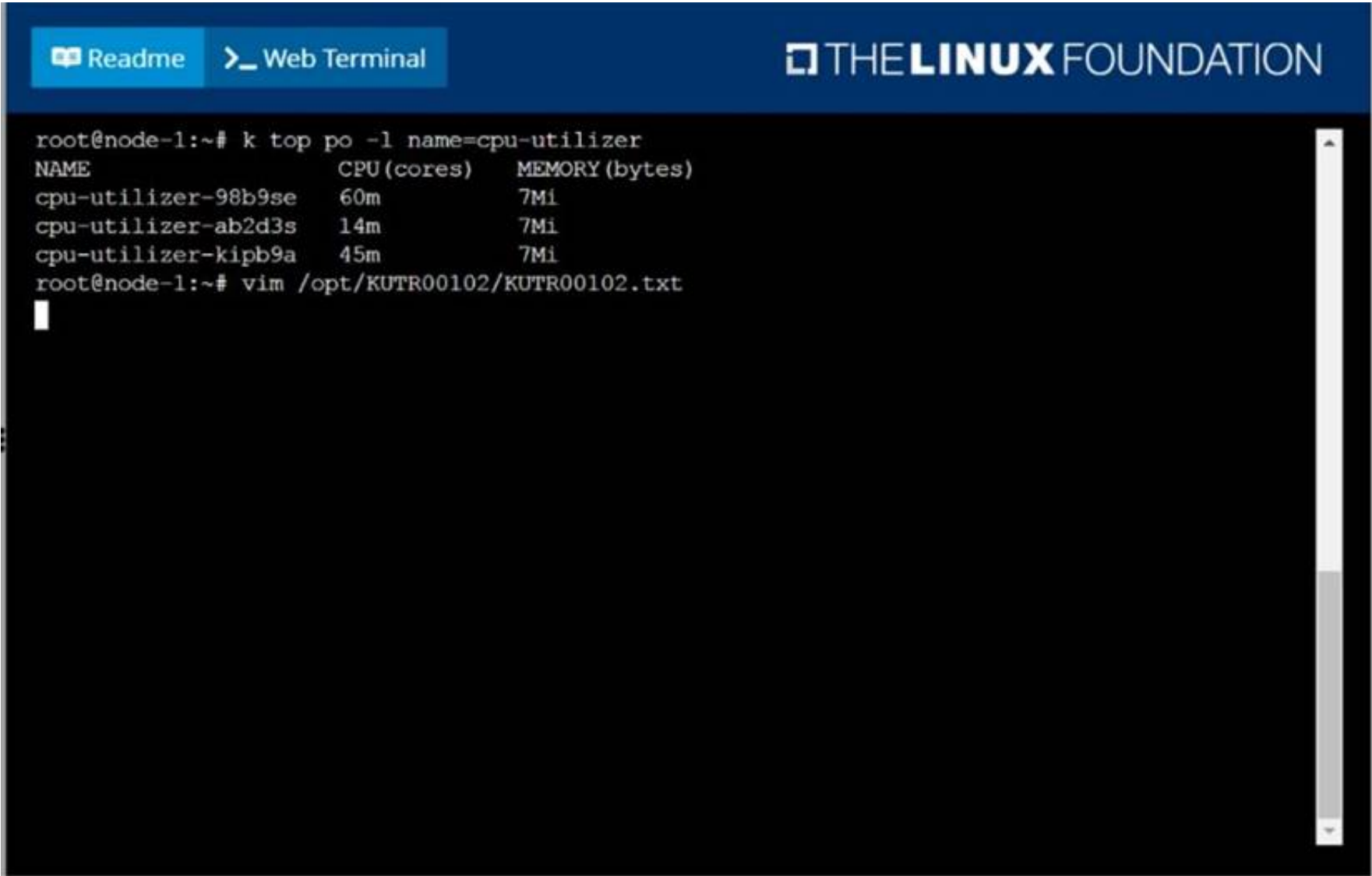
From the pod label name=cpu-utilizer, find pods running high CPU workloads and write the name of the pod consuming most CPU to the file /opt/KUTR00102/KUTR00102.txt (which already exists).

A.

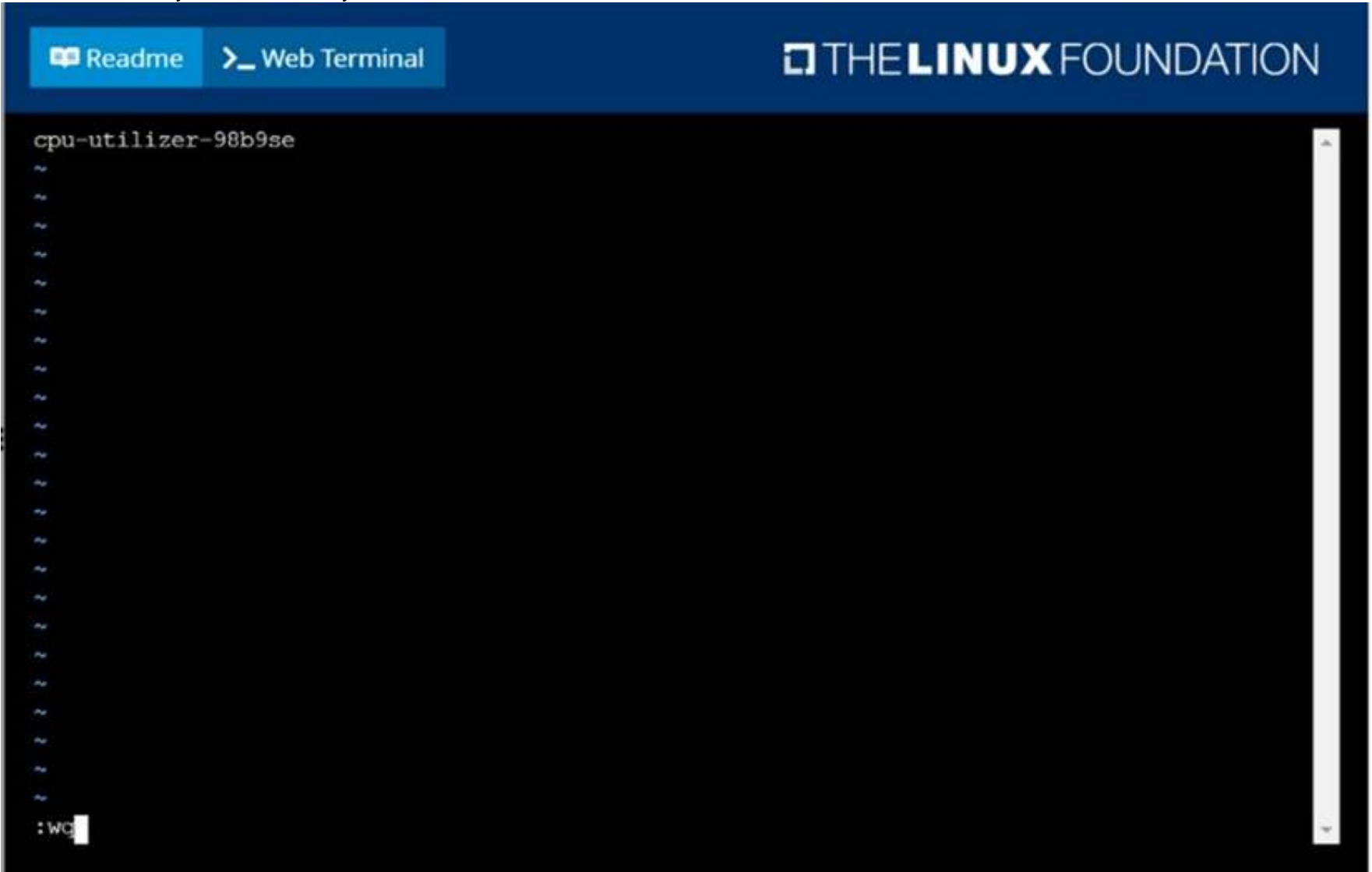
**Answer:** Seethesolutionbelow.

**Explanation:**

solution



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**NEW QUESTION 19**

CORRECT TEXT

Create a pod as follows:

- ? Name: mongo
- ? Using Image: mongo
- ? In a new Kubernetes namespace named: my-website

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**  
 solution

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```
root@node-1:~#
root@node-1:~#
root@node-1:~# k create ns my-website
namespace/my-website created
root@node-1:~# k run mongo --image=mongo -n my-website
pod/mongo created
root@node-1:~# k get po -n my-website
NAME      READY   STATUS             RESTARTS   AGE
mongo     0/1     ContainerCreating   0           4s
root@node-1:~#
```

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#### NEW QUESTION 20

CORRECT TEXT

Create a deployment as follows:

? Name: nginx-app

? Using container nginx with version 1.11.10-alpine

? The deployment should contain 3 replicas

Next, deploy the application with new version 1.11.13-alpine, by performing a rolling update.

Finally, rollback that update to the previous version 1.11.10-alpine.

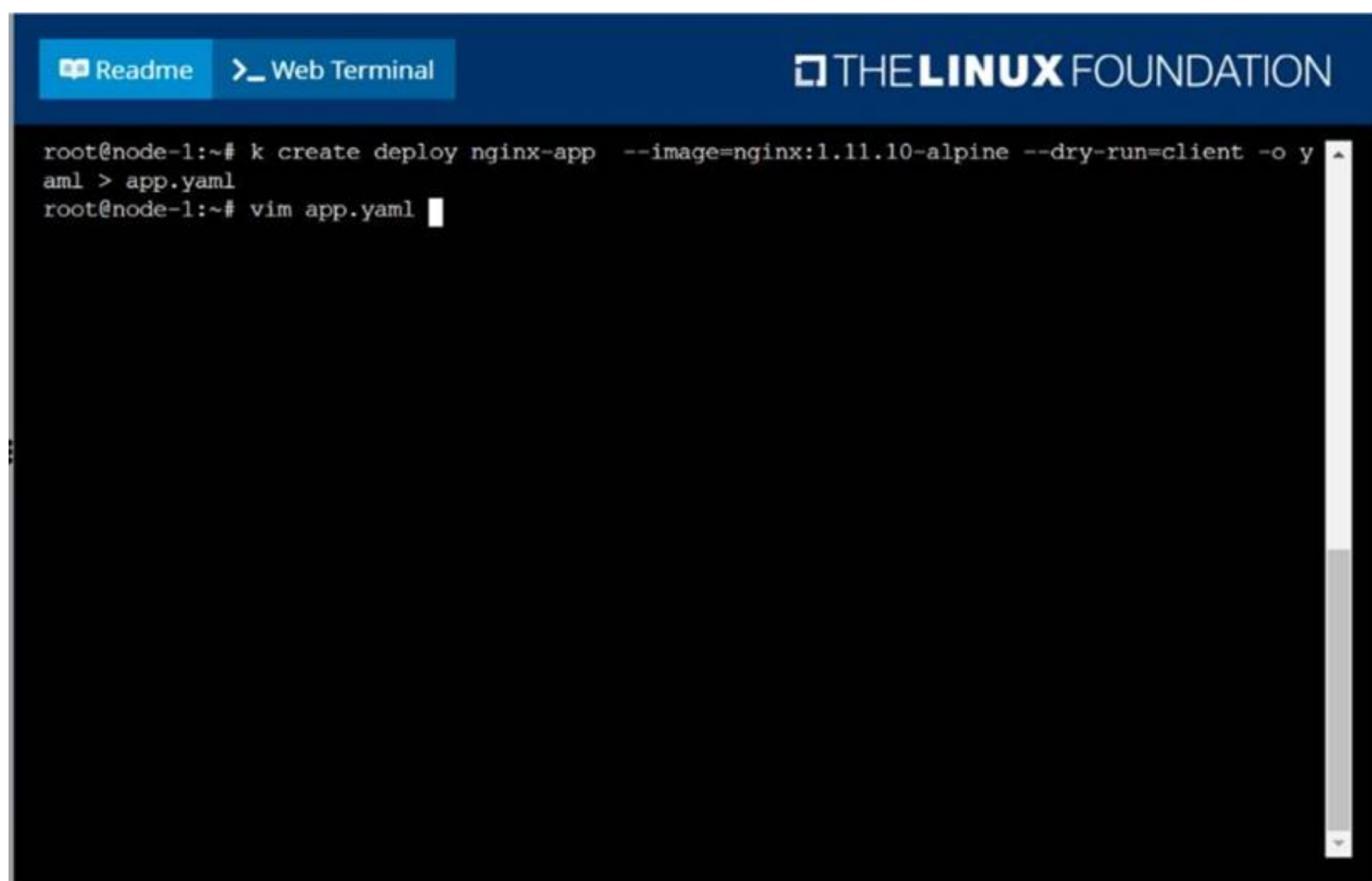
- A. Mastered
- B. Not Mastered

**Answer:** A

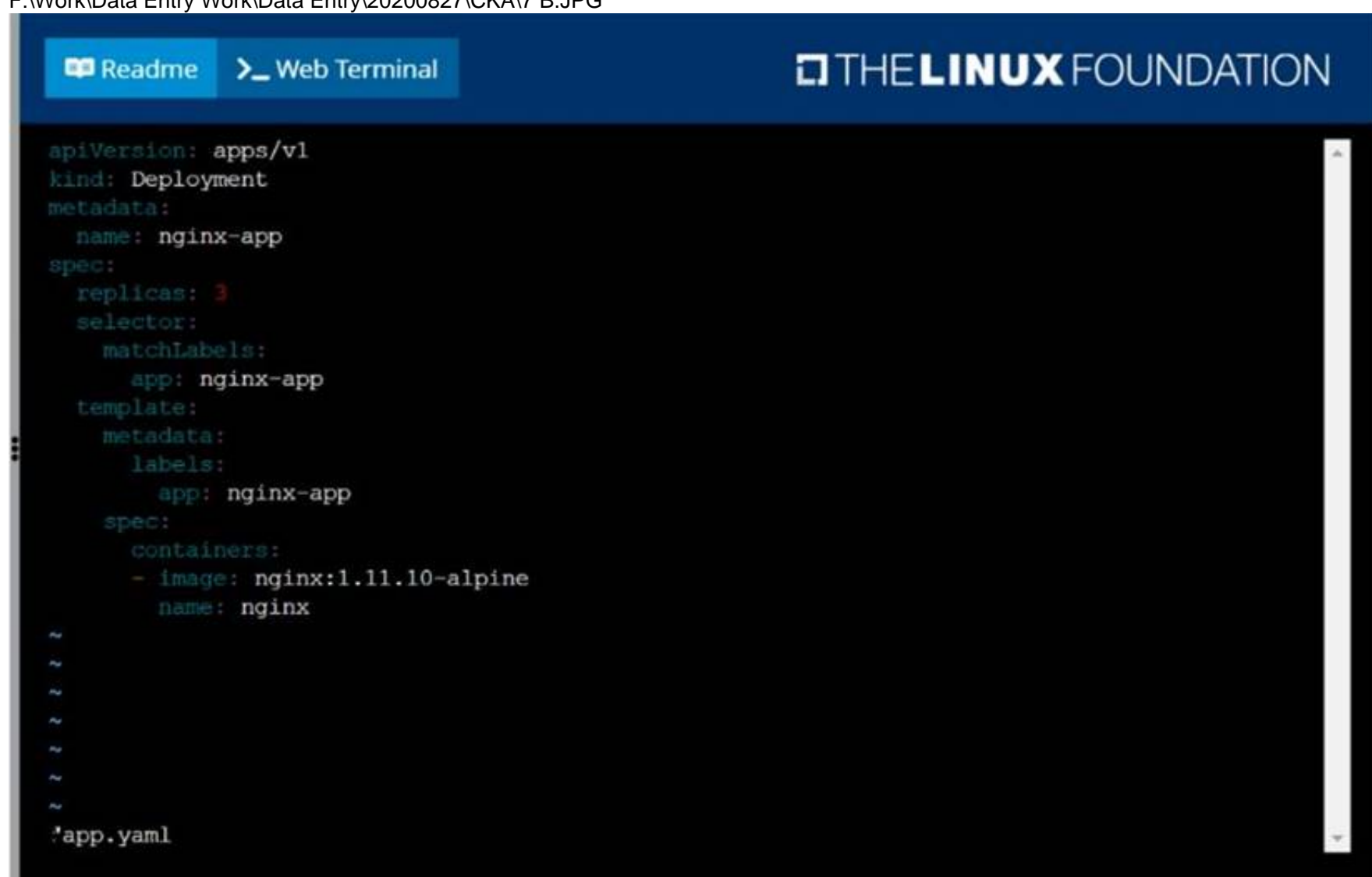
**Explanation:**

solution

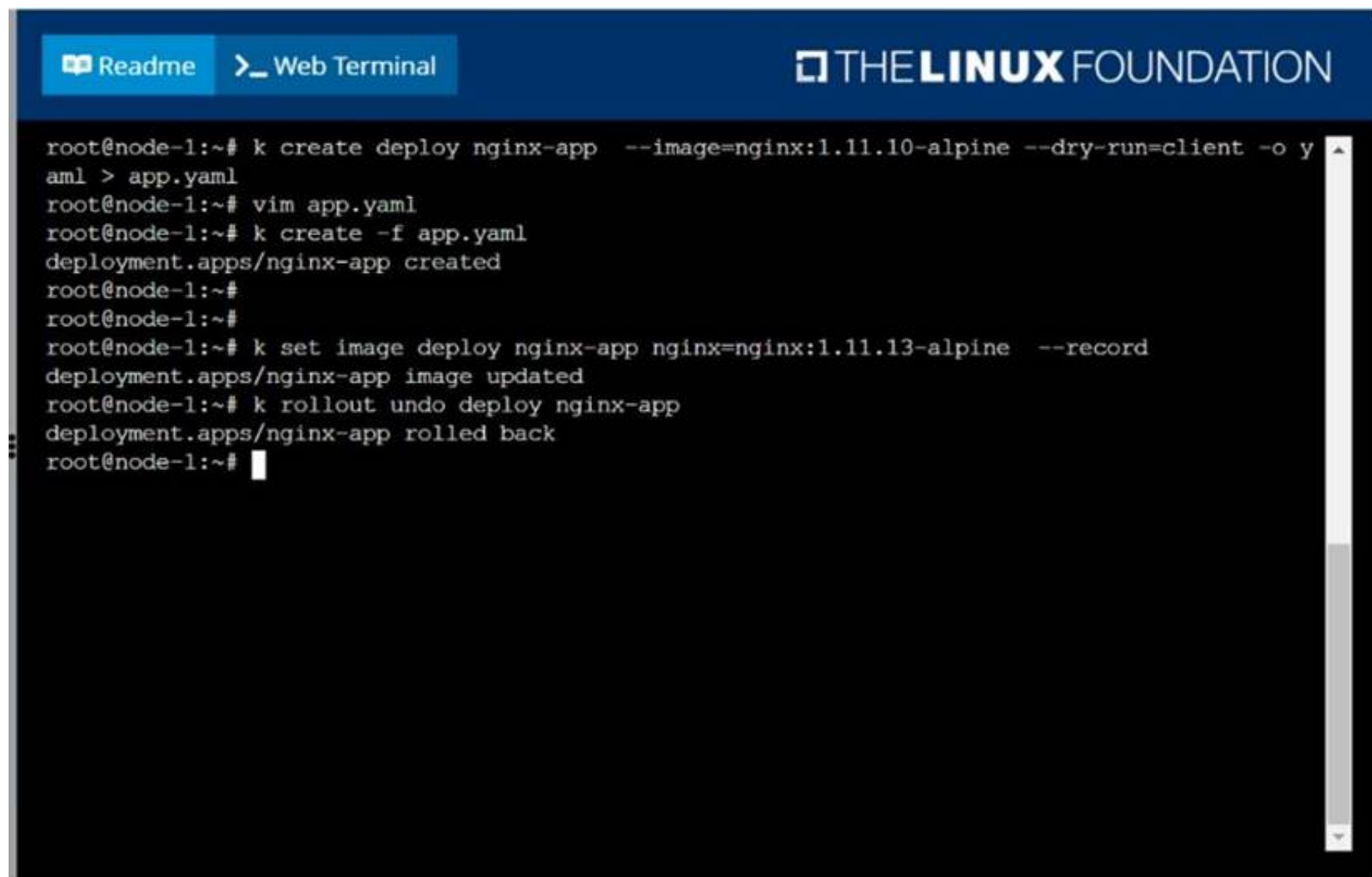




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```
root@node-1:~# k create deploy nginx-app --image=nginx:1.11.10-alpine --dry-run=client -o y
aml > app.yaml
root@node-1:~# vim app.yaml
root@node-1:~# k create -f app.yaml
deployment.apps/nginx-app created
root@node-1:~#
root@node-1:~#
root@node-1:~# k set image deploy nginx-app nginx=nginx:1.11.13-alpine --record
deployment.apps/nginx-app image updated
root@node-1:~# k rollout undo deploy nginx-app
deployment.apps/nginx-app rolled back
root@node-1:~#
```

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#### NEW QUESTION 22

CORRECT TEXT

Get list of all the pods showing name and namespace with a jsonpath expression.

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

kubectl get pods -o=jsonpath="{.items[\*]['metadata.name']  
, 'metadata.namespace']}"

#### NEW QUESTION 27

CORRECT TEXT

Create a pod as follows:

? Name: non-persistent-redis

? container Image: redis

? Volume with name: cache-control

? Mount path: /data/redis

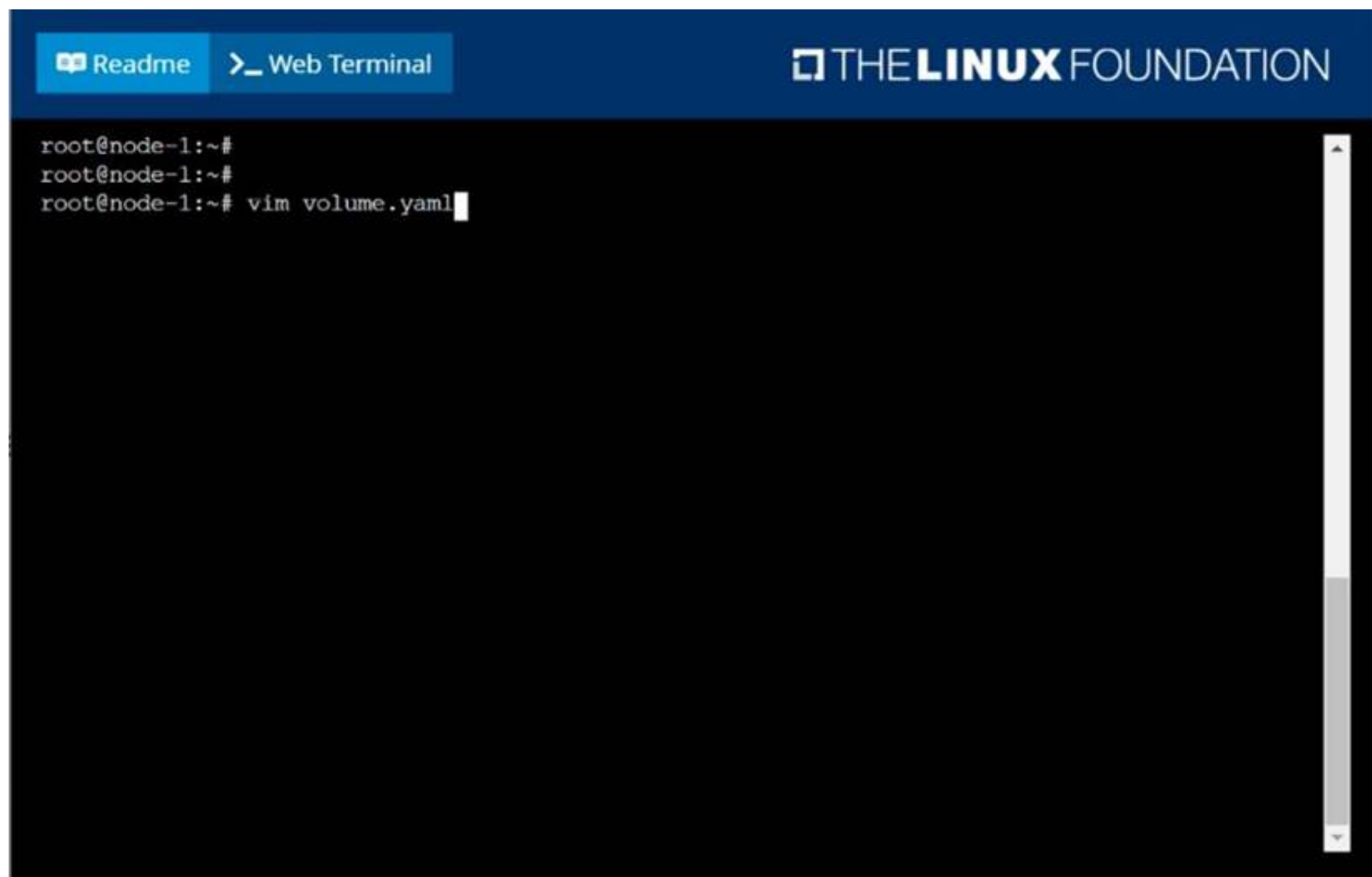
The pod should launch in the staging namespace and the volume must not be persistent.

- A. Mastered
- B. Not Mastered

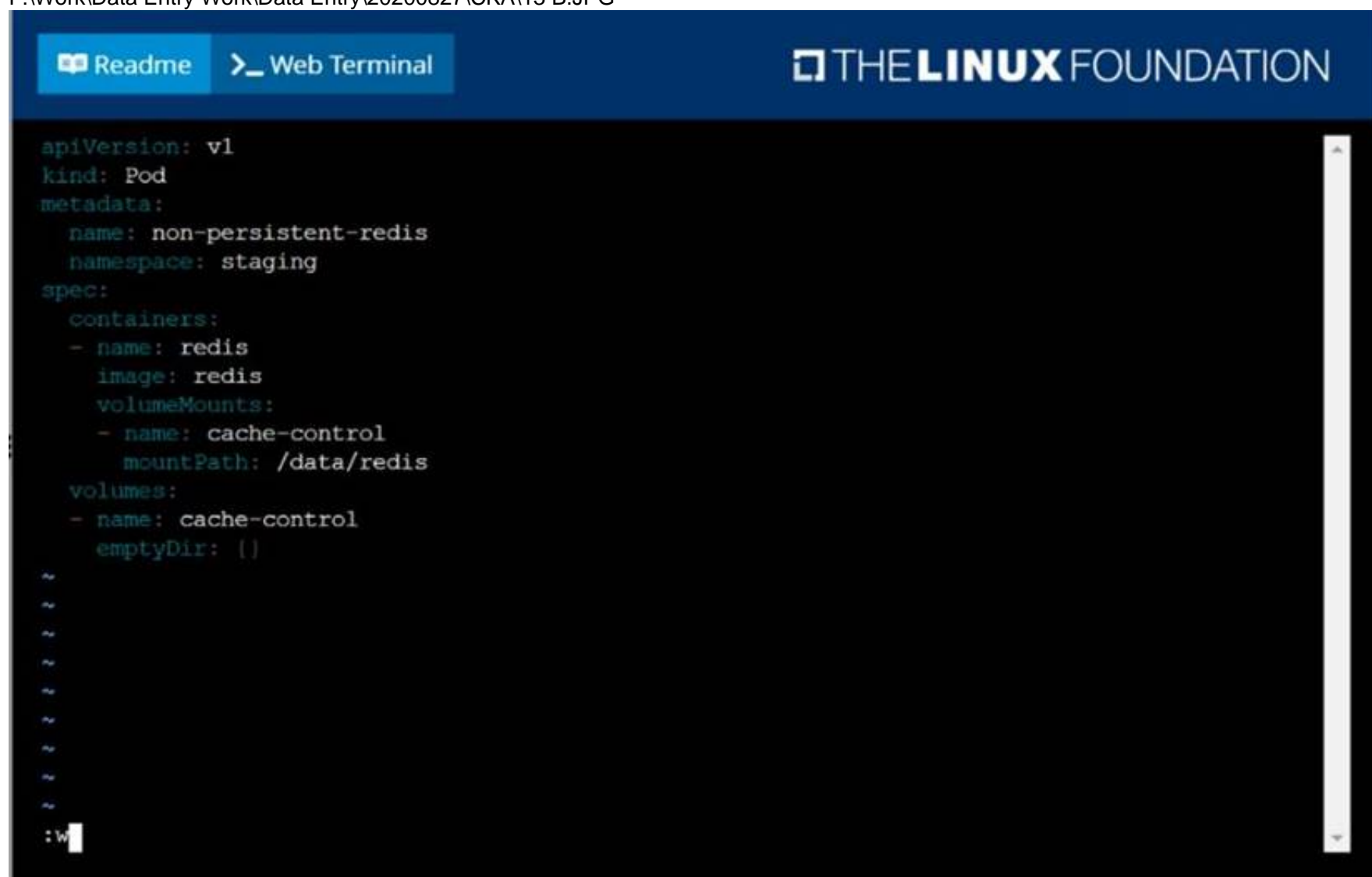
**Answer:** A

#### Explanation:

solution



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```
root@node-1:~#
root@node-1:~#
root@node-1:~# vim volume.yaml
root@node-1:~# k create -f volume.yaml
pod/non-persistent-redis created
root@node-1:~# k get po -n staging
NAME                READY   STATUS    RESTARTS   AGE
non-persistent-redis 1/1     Running   0           6s
root@node-1:~#
```

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#### NEW QUESTION 31

##### CORRECT TEXT

Configure the kubelet systemd- managed service, on the node labelled with name=wk8s- node-1, to launch a pod containing a single container of Image httpd named webtool automatically. Any spec files required should be placed in the /etc/kubernetes/manifests directory on the node.

You can ssh to the appropriate node using:

```
[student@node-1] $ ssh wk8s-node-1
```

You can assume elevated privileges on the node with the following command:

```
[student@wk8s-node-1] $ | sudo -i
```

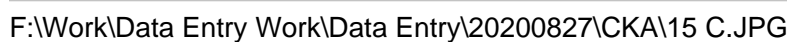
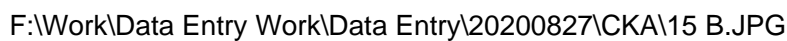
- A. Mastered
- B. Not Mastered

**Answer:** A

##### Explanation:

solution





**CORRECT TEXT**  
List all the pods showing name and namespace with a json path expression

- ```
kubectl get pods -o=jsonpath="{.items[*]['metadata.name',  
'metadata.namespace']}"
```



requests: storage: 2Gi  
storageClassName: shared  
\* 2. Save and create the pvc  
njerry191@cloudshell:~ (extreme-clone-2654111)\$ kubectl create -f app-data.yaml persistentvolumeclaim/app-data created  
\* 3. View the pvc

```
njerry191@cloudshell:~ (extreme-clone-2654111)$ kubectl get pvc
NAME          STATUS    VOLUME   CAPACITY   ACCESS MODES   STORAGECLASS
pv            Bound     pv        512m       RWX             shared
```

Image for post  
\* 4. Let's see what has changed in the pv we had initially created.

```
njerry191@cloudshell:~ (extreme-clone-2654111)$ kubectl get pv
NAME          CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS   CLAIM          STORAGECLASS   REASON   AGE
pv            512m       RWX             Retain            Bound    default/pv     shared         16m
```

Image for post  
Our status has now changed from available to bound.  
\* 5. Create a new pod named myapp with image nginx that will be used to Mount the Persistent Volume Claim with the path /var/app/config.  
Mounting a Claim  
apiVersion: v1kind: Podmetadata: creationTimestamp: null name: app-dataspec: volumes: - name:congigpvc persistenVolumeClaim: claimName: app-data  
containers: - image: nginx name: app volumeMounts: - mountPath: "/srv/app-data " name: configpvc

**NEW QUESTION 42**

CORRECT TEXT  
Create a busybox pod and add “sleep 3600” command

- A. Mastered
- B. Not Mastered

Answer: A

**Explanation:**  
kubectl run busybox --image=busybox --restart=Never -- /bin/sh -c "sleep 3600"

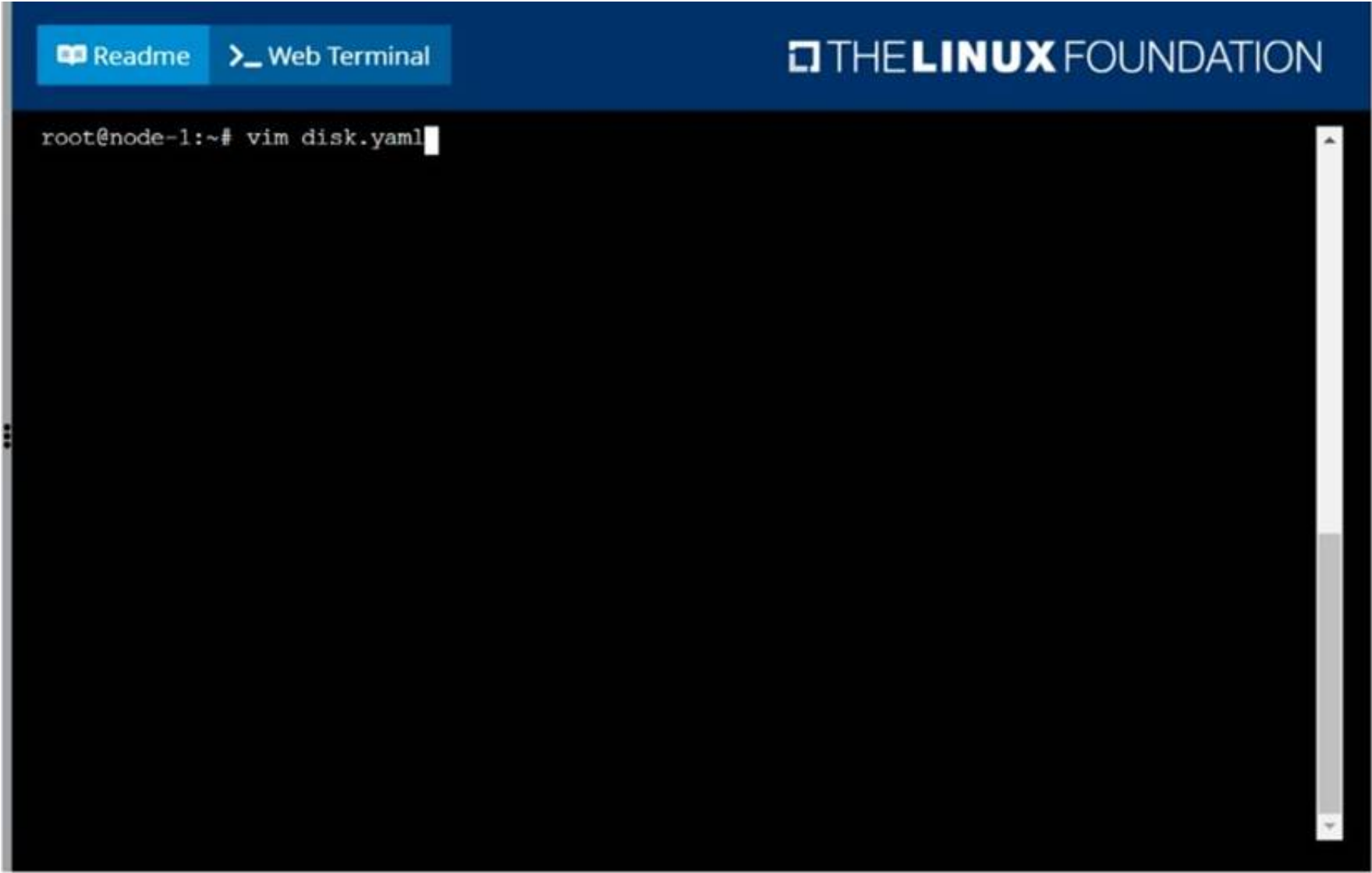
**NEW QUESTION 43**

CORRECT TEXT  
Schedule a pod as follows:  
? Name: nginx-kusc00101  
? Image: nginx  
? Node selector: disk=ssd

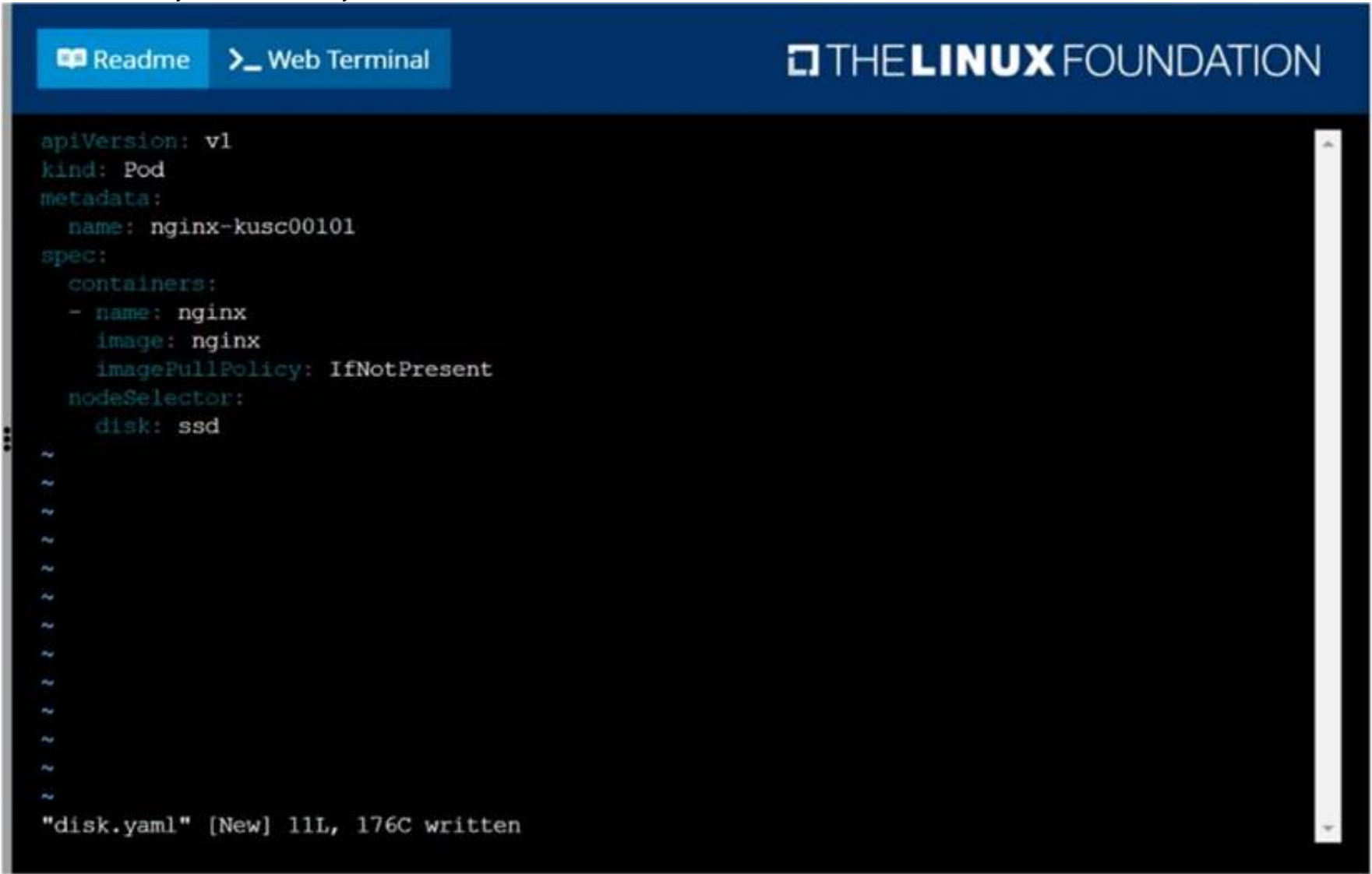
- A. Mastered
- B. Not Mastered

Answer: A

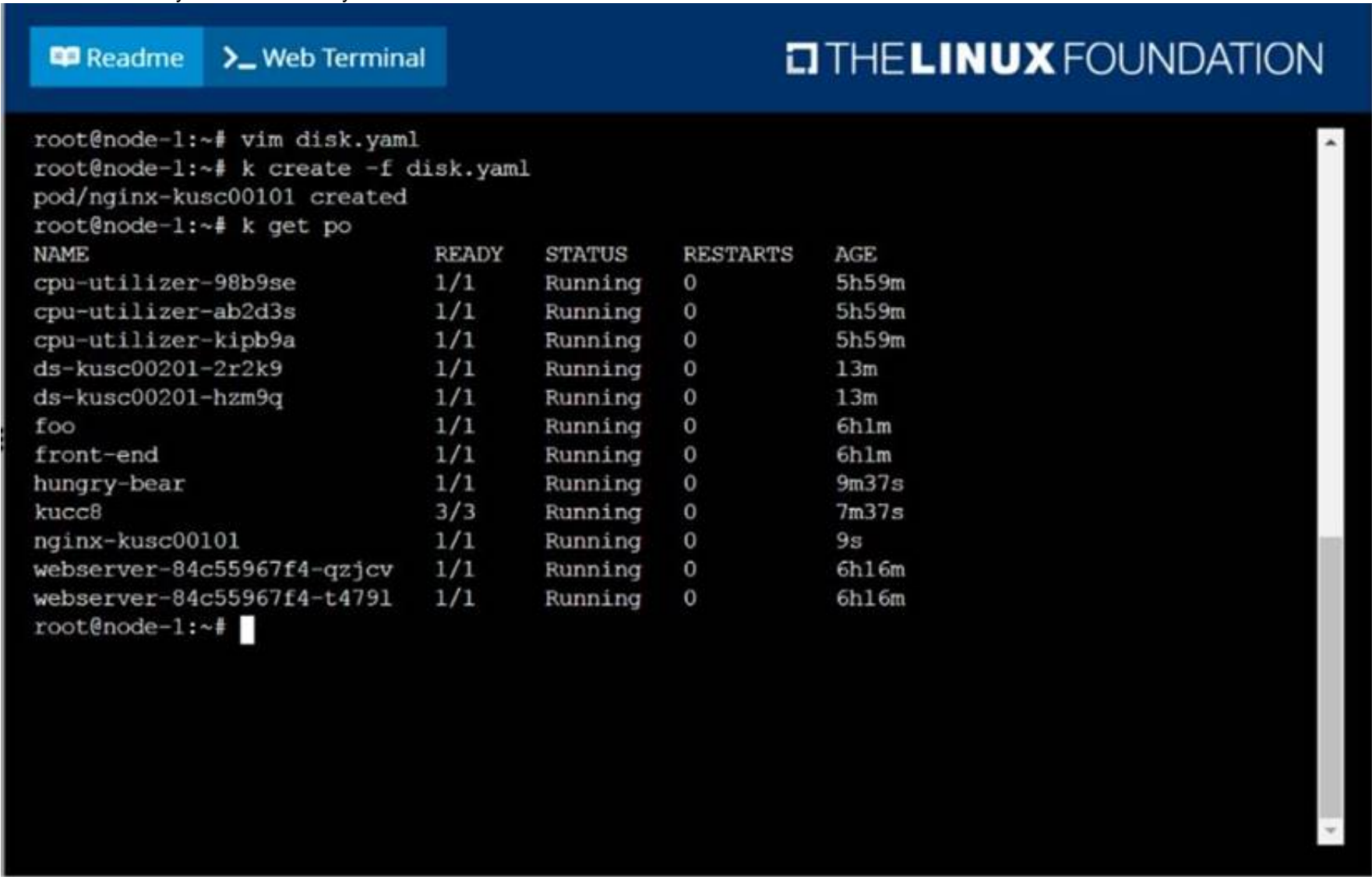
**Explanation:**  
solution



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**NEW QUESTION 48**

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 53

CORRECT TEXT

Create a nginx pod with label env=test in engineering namespace

- A. Mastered
- B. Not Mastered

**Answer:** A

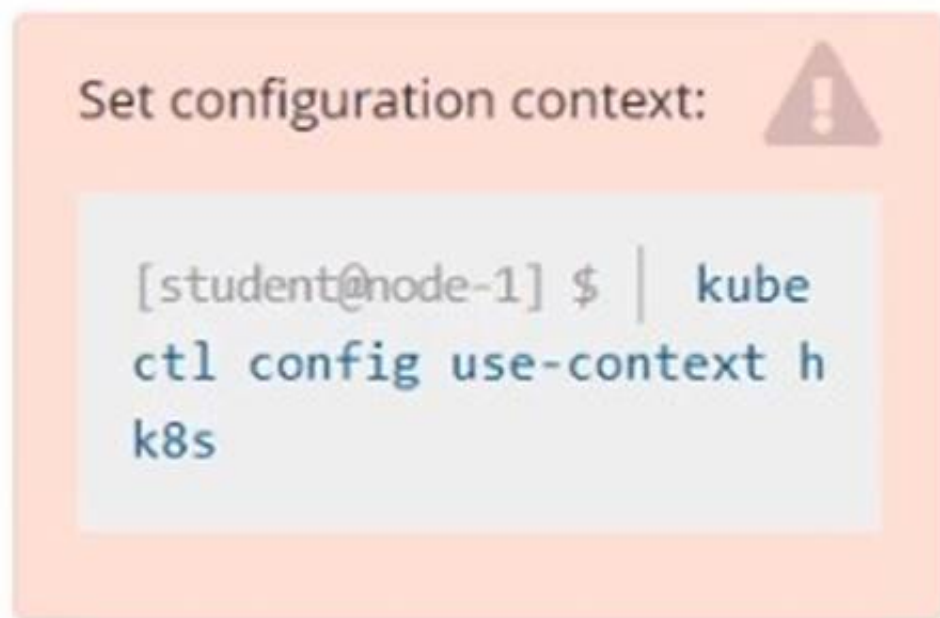
#### Explanation:

```
kubectl run nginx --image=nginx --restart=Never --labels=env=test
-- namespace=engineering --dry-run -o yaml > nginx-pod.yaml
kubectl run nginx --image=nginx --restart=Never --labels=env=test --
namespace=engineering --dry-run -o yaml | kubectl create -n engineering -f -
YAML File:
apiVersion: v1
kind: Pod
metadata:
  name: nginx
  namespace: engineering
labels:
  env: test
spec:
  containers:
  - name: nginx
    image: nginx
    imagePullPolicy: IfNotPresent
    restartPolicy: Never
kubectl create -f nginx-pod.yaml
```

### NEW QUESTION 56

CORRECT TEXT

Score: 4%



Task

Create a persistent volume with name app-data , of capacity 1Gi and access mode ReadOnlyMany. The type of volume is hostPath and its location is /srv/app-data .

- A. Mastered
- B. Not Mastered

**Answer:** A

#### Explanation:

Solution:

```
#vi pv.yaml
apiVersion: v1
kind: PersistentVolume
metadata:
  name: app-config
spec:
  capacity:
    storage: 1Gi
  accessModes:
  - ReadOnlyMany
  hostPath:
    path: /srv/app-config
#
kubectl create -f pv.yaml
```

### NEW QUESTION 57

CORRECT TEXT

Create a pod with environment variables as var1=value1. Check the environment variable in pod

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

```
kubectl run nginx --image=nginx --restart=Never --env=var1=value1
# then
kubectl exec -it nginx -- env
# or
kubectl exec -it nginx -- sh -c 'echo $var1'
# or
kubectl describe po nginx | grep value1
```

#### NEW QUESTION 60

CORRECT TEXT

List “nginx-dev” and “nginx-prod” pod and delete those pods

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

```
kubect1 get pods -o wide
kubectl delete po “nginx-dev” kubectl delete po “nginx-prod”
```

#### NEW QUESTION 63

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 67

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