Exam Questions CKA

Certified Kubernetes Administrator (CKA) Program

https://www.2passeasy.com/dumps/CKA/

NEW QUESTION 1
CORRECT TEXT
List all the pods sorted by name

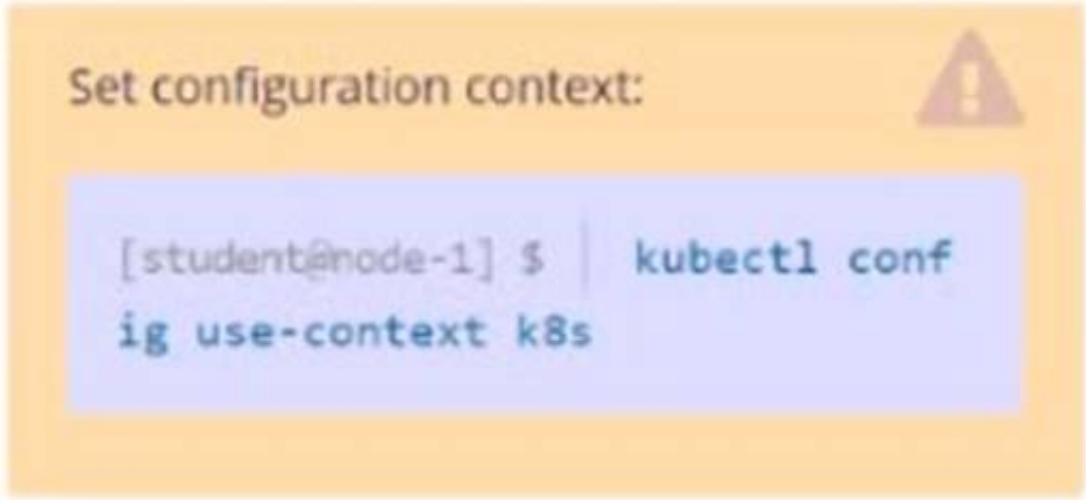A. Mastered
B. Not Mastered

Answer: A

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

NEW QUESTION 2
CORRECT TEXT
Task Weight: 4%

Task
Schedule a Pod as follows:
• Name: kucc1
• App Containers: 2
• Container Name/Images: o nginx
o consul

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Solution:

```
student@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
student@node-1:~$ kubectl run kucc1   --image=nginx --dry-run=client -o yaml > aa.y
```

```
apiversion: v1
kind: Pod
metadata:
  labels:
    run: kucc1
  name: kucc1
spec:
  containers:
  - image: nginx
    name: nginx
  - image: consul
    name: consul
```

Graphical user interface, text, application
Description automatically generated

```
student@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
student@node-1:~$ kubectl run kucc1   --image=nginx --dry-run=client -o yaml > aa.yaml
student@node-1:~$ vim aa.yaml
student@node-1:~$ kubectl   create  -f aa.yaml
pod/kucc1 created
student@node-1:~$ kubectl get pods
NAME                        READY     STATUS            RESTARTS     AGE
11-factor-app               1/1       Running           0            6h34m
cpu-loader-98b9se           1/1       Running           0            6h33m
cpu-loader-ab2d3s           1/1       Running           0            6h33m
cpu-loader-kipb9a           1/1       Running           0            6h33m
foobar                      1/1       Running           0            6h34m
front-end-6bc87b9748-24rcm  1/1       Running           0            5m4s
front-end-6bc87b9748-hd5wp  1/1       Running           0            5m2s
kucc1                       0/2       ContainerCreating 0            3s
nginx-kusc00401             1/1       Running           0            2m28s
webserver-84c89dfd75-2d1jn  1/1       Running           0            6h38m
webserver-84c89dfd75-8d8x2  1/1       Running           0            6h38m
webserver-84c89dfd75-z5zz4  1/1       Running           0            3m51s
student@node-1:~$ []
```

Text Description automatically generated

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
Score:7%

Set configuration context:

```
[student@node-1] $ | kube
ctl config use-context o
k8s
```

Task
Create a new PersistentVolumeClaim
• Name: pv-volume
• Class: csi-hostpath-sc
• Capacity: 10Mi
Create a new Pod which mounts the PersistentVolumeClaim as a volume:
• Name: web-server
• Image: nginx
• Mount path: /usr/share/nginx/html
Configure the new Pod to have ReadWriteOnce access on the volume.
Finally, using kubectl edit or kubectl patch expand the PersistentVolumeClaim to a capacity of 70Mi and record that change.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:
vi pvc.yaml
storageclass pvc
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
name: pv-volume

```
spec:
accessModes:
- ReadWriteOnce
volumeMode: Filesystem
resources:
requests:
storage: 10Mi
storageClassName: csi-hostpath-sc
# vi pod-pvc.yaml
apiVersion: v1
kind: Pod
metadata:
name: web-server
spec:
containers:
- name: web-server
image: nginx
volumeMounts:
- mountPath: "/usr/share/nginx/html"
name: my-volume
volumes:
- name: my-volume
persistentVolumeClaim:
claimName: pv-volume
# craete
kubectl create -f pod-pvc.yaml
#edit
kubectl edit pvc pv-volume --record
```

NEW QUESTION 5
CORRECT TEXT
Score: 4%
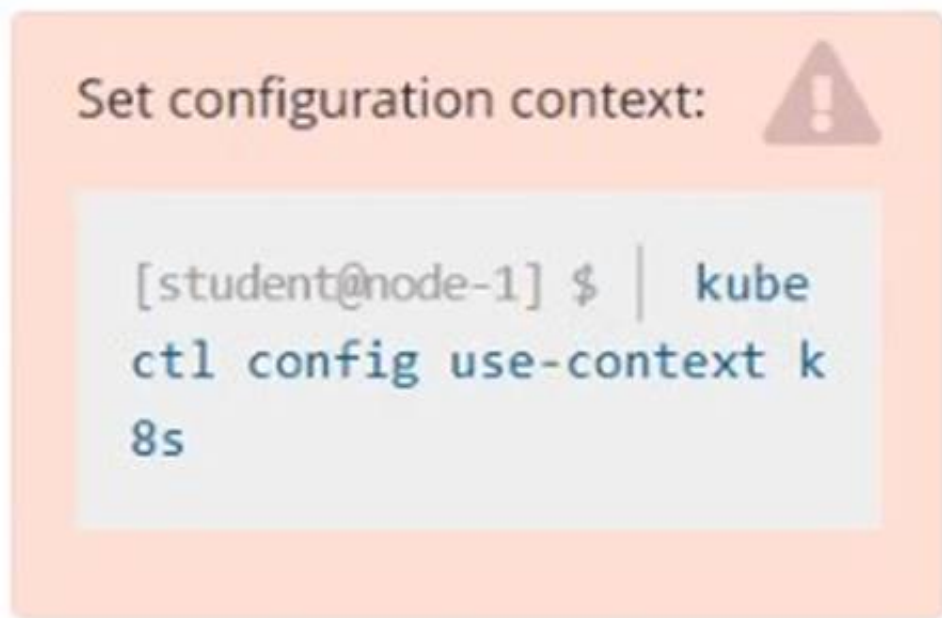
Task
Check to see how many nodes are ready (not including nodes tainted NoSchedule) and write the number to /opt/KUSC00402/kusc00402.txt.

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Solution:
kubectl describe nodes | grep ready|wc -l
kubectl describe nodes | grep -i taint | grep -i noschedule |wc -l
echo 3 > /opt/KUSC00402/kusc00402.txt
#
kubectl get node | grep -i ready |wc -l
taintsnoSchedule
kubectl describe nodes | grep -i taints | grep -i noschedule |wc -l
#
echo 2 > /opt/KUSC00402/kusc00402.txt

NEW QUESTION 6
CORRECT TEXT
Score: 7%

Set configuration context:

```
[student@node-1] $ |  kube
ctl config use-context m
k8s
```

Task

Given an existing Kubernetes cluster running version 1.20.0, upgrade all of the Kubernetes control plane and node components on the master node only to version 1.20.1.

Be sure to drain the master node before upgrading it and uncordon it after the upgrade.

You can ssh to the master node using:

```
[student@node-1] $ |  ssh
mk8s-master-0
```

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

```
[student@mk8s-master-0]
$
sudo -i
```

You are also expected to upgrade kubelet and kubectl on the master node.

Do not upgrade the worker nodes, etcd, the container manager, the CNI plugin, the DNS service or any other addons.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
SOLUTION:
[student@node-1] > ssh ek8s
kubectl cordon k8s-master
kubectl drain k8s-master --delete-local-data --ignore-daemonsets --force
apt-get install kubeadm=1.20.1-00 kubelet=1.20.1-00 kubectl=1.20.1-00 --
disableexcludes=kubernetes
kubeadm upgrade apply 1.20.1 --etcd-upgrade=false
systemctl daemon-reload
systemctl restart kubelet kubectl
uncordon k8s-master

NEW QUESTION 7
CORRECT TEXT
Score: 4%

Context
You have been asked to create a new ClusterRole for a deployment pipeline and bind it to a specific ServiceAccount scoped to a specific namespace.
Task
Create a new ClusterRole named deployment-clusterrole, which only allows to create the following resource types:
• Deployment
• StatefulSet
• DaemonSet
Create a new ServiceAccount named cicd-token in the existing namespace app-team1. Bind the new ClusterRole deployment-clusterrole lo the new ServiceAccount cicd-token ,
limited to the namespace app-team1.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Solution:
Task should be complete on node k8s -1 master, 2 worker for this connect use command [student@node-1] > ssh k8s
kubectl create clusterrole deployment-clusterrole --verb=create -- resource=deployments,statefulsets,daemonsets
kubectl create serviceaccount cicd-token --namespace=app-team1
kubectl create rolebinding deployment-clusterrole --clusterrole=deployment-clusterrole -- serviceaccount=default:cicd-token --namespace=app-team1

NEW QUESTION 8
CORRECT TEXT
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

```
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root@node-1:~# kubectl config use-context ek8s
Switched to context "ek8s".
root@node-1:~# k drain ek8s-node-1 --ignore-daemonsets --delete-local-data --force
node/ek8s-node-1 cordoned
WARNING: ignoring DaemonSet-managed Pods: kube-system/kube-flannel-ds-amd64-qj7w8, kube-syst
em/kube-proxy-x7xkv
evicting pod default/nginx-568f5649b8-c9zkj
evicting pod kube-system/metrics-server-64b57fd654-cktk5
☐
```

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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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root@node-1:~# k scale deploy webserver --replicas=6
deployment.apps/webserver scaled
root@node-1:~# k get deploy
NAME        READY    UP-TO-DATE    AVAILABLE    AGE
nginx-app   3/3      3             3            29m
webserver   6/6      6             6            6h50m
root@node-1:~# ▮
```

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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
Score: 7%

Set configuration context:

```
[student@node-1] $ | kube
ctl config use-context k
8s
```

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 --tarport=80 -- type=NodePort

NEW QUESTION 12
CORRECT TEXT
Create an nginx pod and list the pod with different levels of verbosity

A. Mastered
B. Not Mastered

Answer: A

Explanation:
// create a pod
kubectl run nginx --image=nginx --restart=Never --port=80
// List the pod with different verbosity
kubectl get po nginx --v=7
kubectl get po nginx --v=8
kubectl get po nginx --v=9

NEW QUESTION 15
CORRECT TEXT
Given a partially-functioning Kubernetes cluster, identify symptoms of failure on the cluster.
Determine the node, the failing service, and take actions to bring up the failed service and restore the health of the cluster. Ensure that any changes are made permanently.
You can ssh to the relevant I nodes (bk8s-master-0 or bk8s-node-0) using:
[student@node-1] $ ssh <nodename>
You can assume elevated privileges on any node in the cluster with the following command:
[student@nodename] $ | sudo –i

A. Mastered
B. Not Mastered

Answer: A

Explanation:
solution

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```
root@node-1:~#
root@node-1:~# kubectl config use-context bk8s
Switched to context "bk8s".
root@node-1:~# ssh bk8s-master-0
Welcome to Ubuntu 16.04.6 LTS (GNU/Linux 4.4.0-1109-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

 * Are you ready for Kubernetes 1.19? It's nearly here! Try RC3 with
   sudo snap install microk8s --channel=1.19/candidate --classic

   https://microk8s.io/ has docs and details.

4 packages can be updated.
1 update is a security update.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


student@bk8s-master-0:~$ sudo -i
root@bk8s-master-0:~# vim /var/lib/kubelet/config.yaml
```

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📖 Readme >_ Web Terminal   □ THE LINUX FOUNDATION

```
authorization:
  mode: Webhook
  webhook:
    cacheAuthorizedTTL: 0s
    cacheUnauthorizedTTL: 0s
clusterDNS:
- 10.96.0.10
clusterDomain: cluster.local
cpuManagerReconcilePeriod: 0s
evictionPressureTransitionPeriod: 0s
fileCheckFrequency: 0s
healthzBindAddress: 127.0.0.1
healthzPort: 10248
httpCheckFrequency: 0s
imageMinimumGCAge: 0s
kind: KubeletConfiguration
nodeStatusReportFrequency: 0s
nodeStatusUpdateFrequency: 0s
rotateCertificates: true
runtimeRequestTimeout: 0s
staticPodPath: /etc/kubernetes/manifests
streamingConnectionIdleTimeout: 0s
syncFrequency: 0s
volumeStatsAggPeriod: 0s
:wq
```

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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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NEW QUESTION 24
CORRECT TEXT
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.
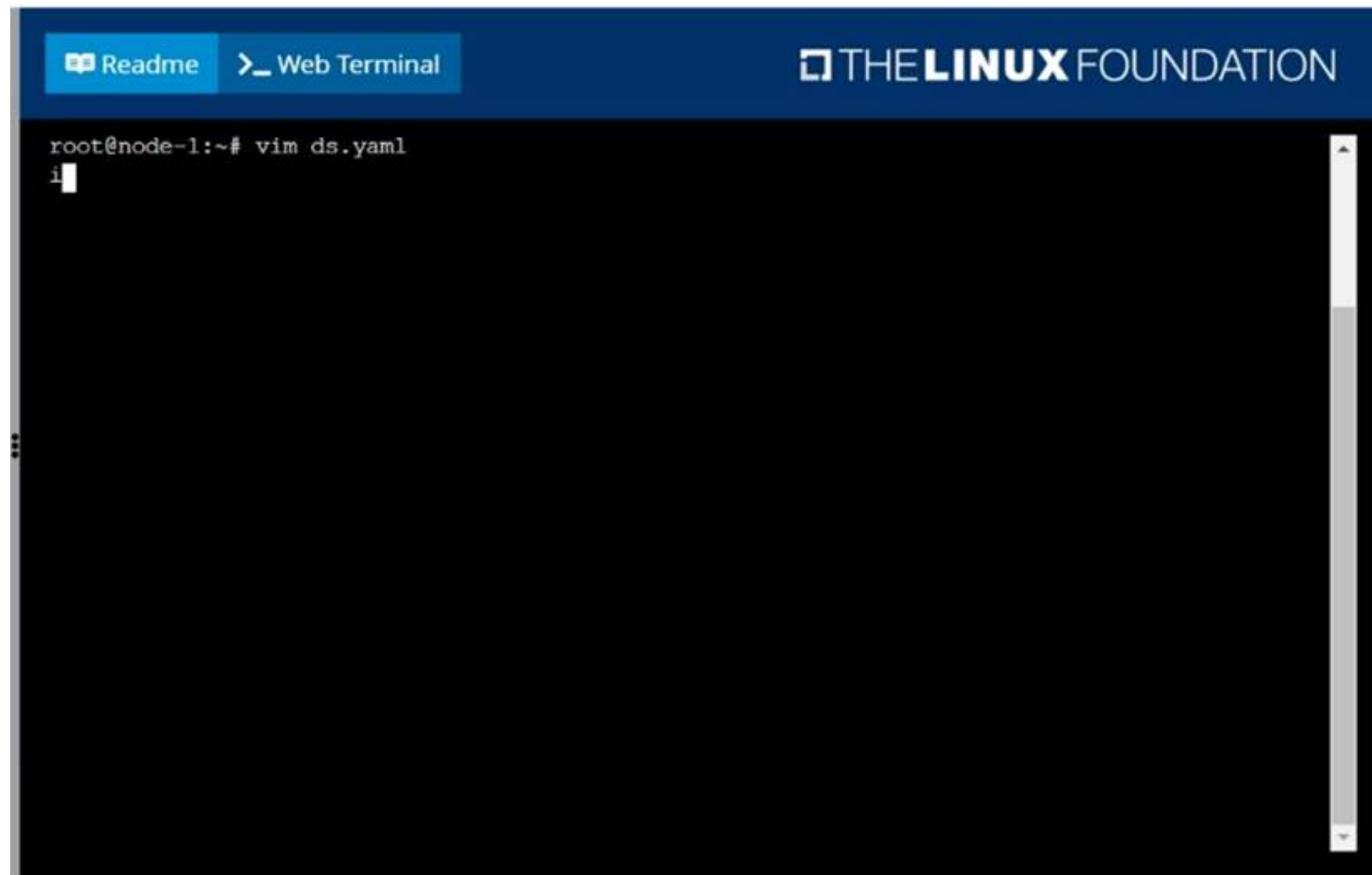Use DaemonSet to complete this task and use ds-kusc00201 as DaemonSet name.

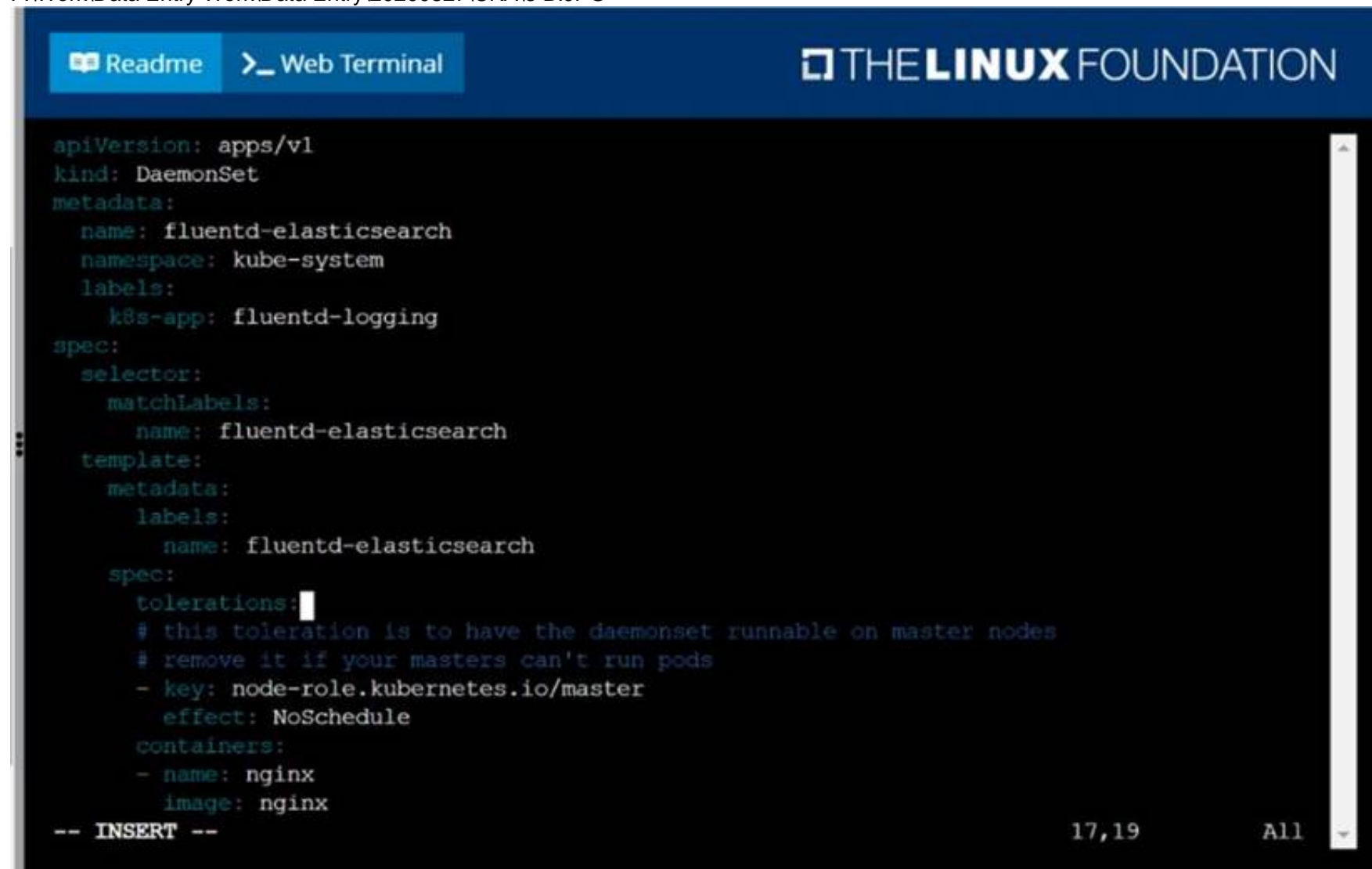A. Mastered
B. Not Mastered

Answer: A

Explanation:
solution

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```
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
```

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```
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:~#
```
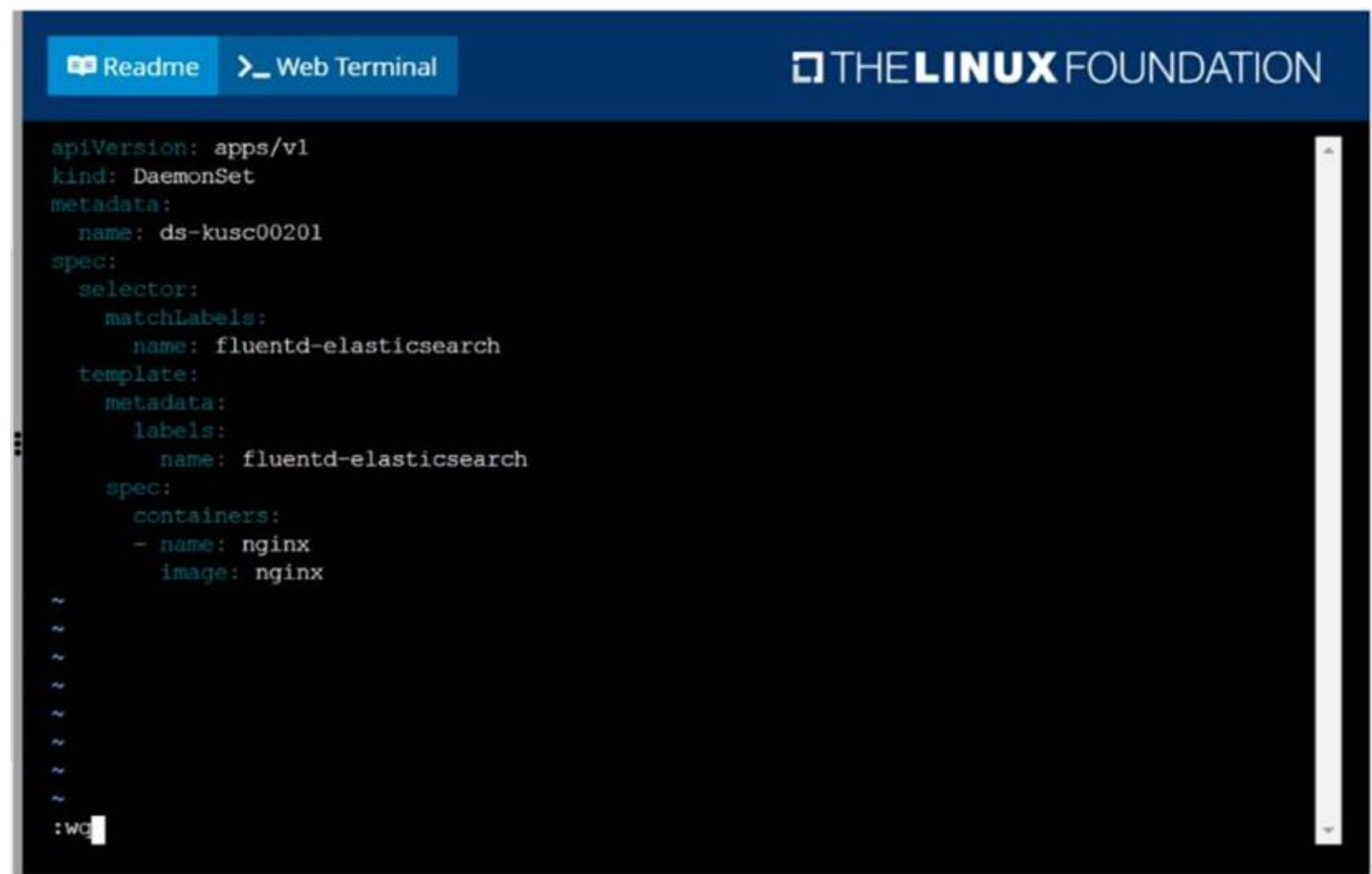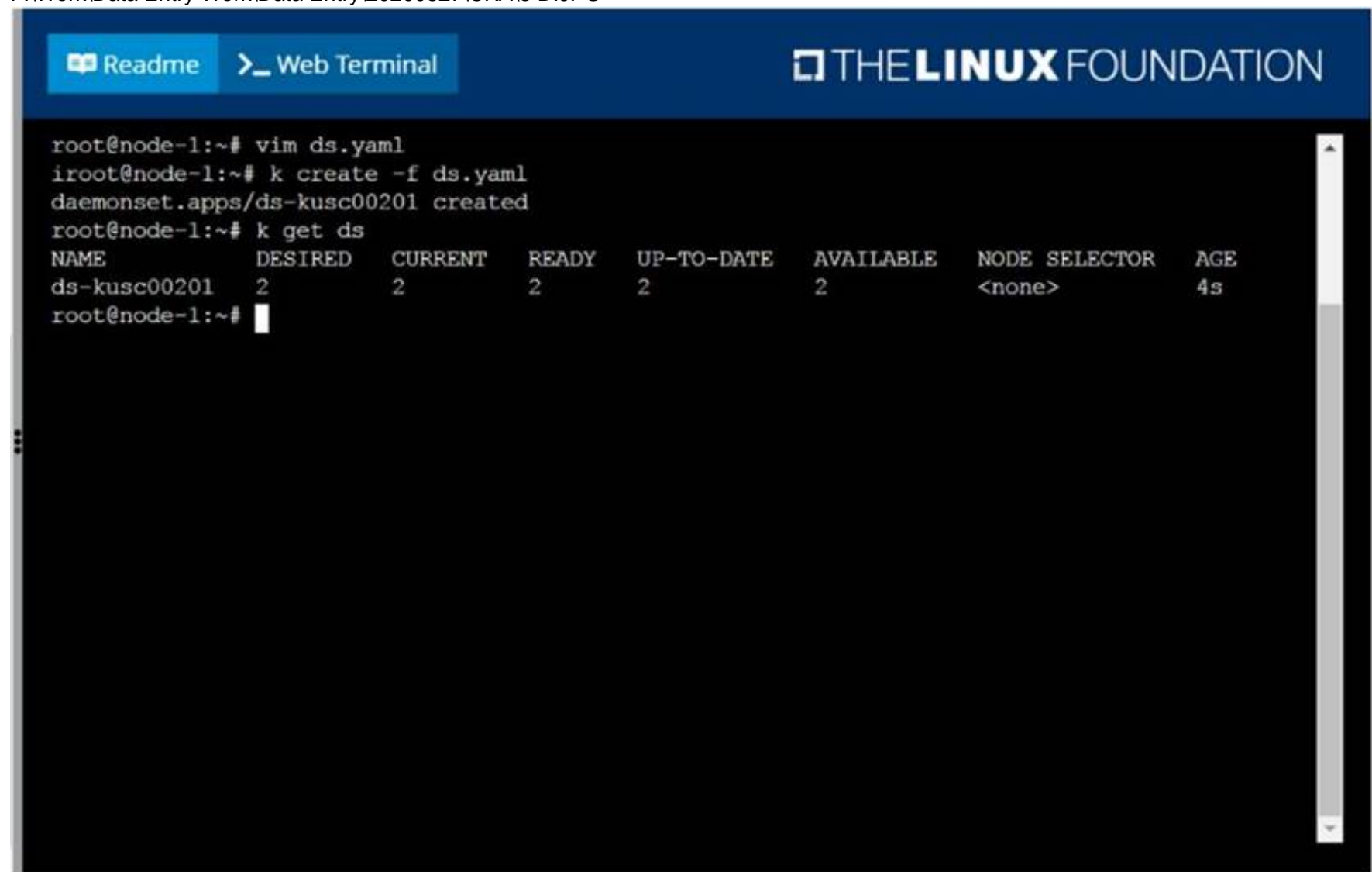
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NEW QUESTION 26
CORRECT TEXT
List the nginx pod with custom columns POD_NAME and POD_STATUS

A. Mastered
B. Not Mastered

Answer: A

Explanation:
kubectl get po -o=custom-columns="POD_NAME:.metadata.name, POD_STATUS:.status.containerStatuses[].state"

NEW QUESTION 27

CORRECT TEXT
Get list of all pods in all namespaces and write it to file "/opt/pods-list.yaml"

A. Mastered
B. Not Mastered

Answer: A

Explanation:
kubectl get po –all-namespaces > /opt/pods-list.yaml

NEW QUESTION 29
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

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F:\Work\Data Entry Work\Data Entry\20200827\CKA\15 C.JPG

NEW QUESTION 32
CORRECT TEXT
A Kubernetes worker node, named wk8s-node-0 is in state NotReady. Investigate why this is the case, and perform any appropriate steps to bring the node to a Ready state, ensuring that any changes are made permanent.
You can ssh to the failed node using:
[student@node-1] $ | ssh Wk8s-node-0
You can assume elevated privileges on the node with the following command:
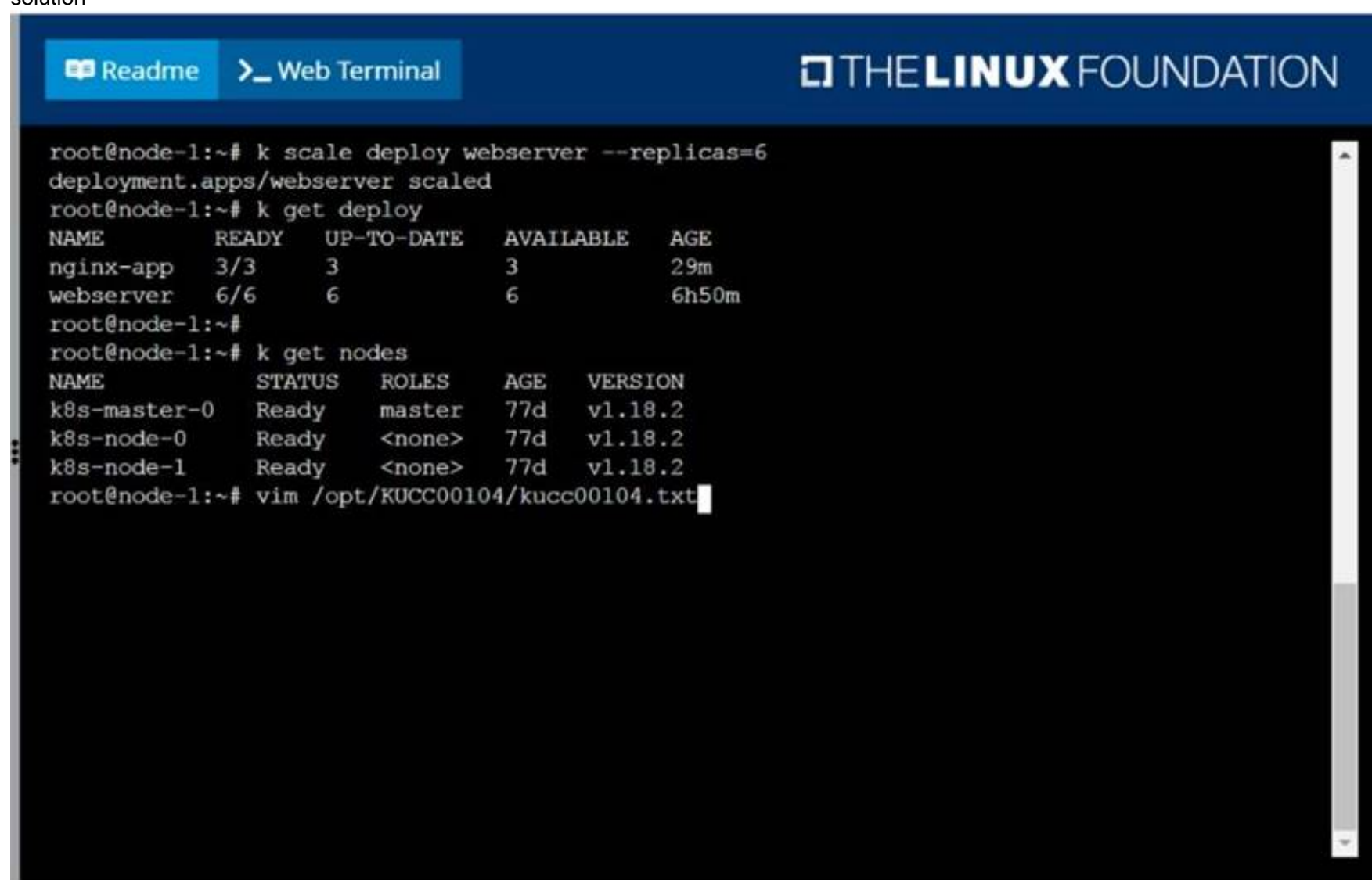[student@w8ks-node-0] $ | sudo –i

A. Mastered
B. Not Mastered

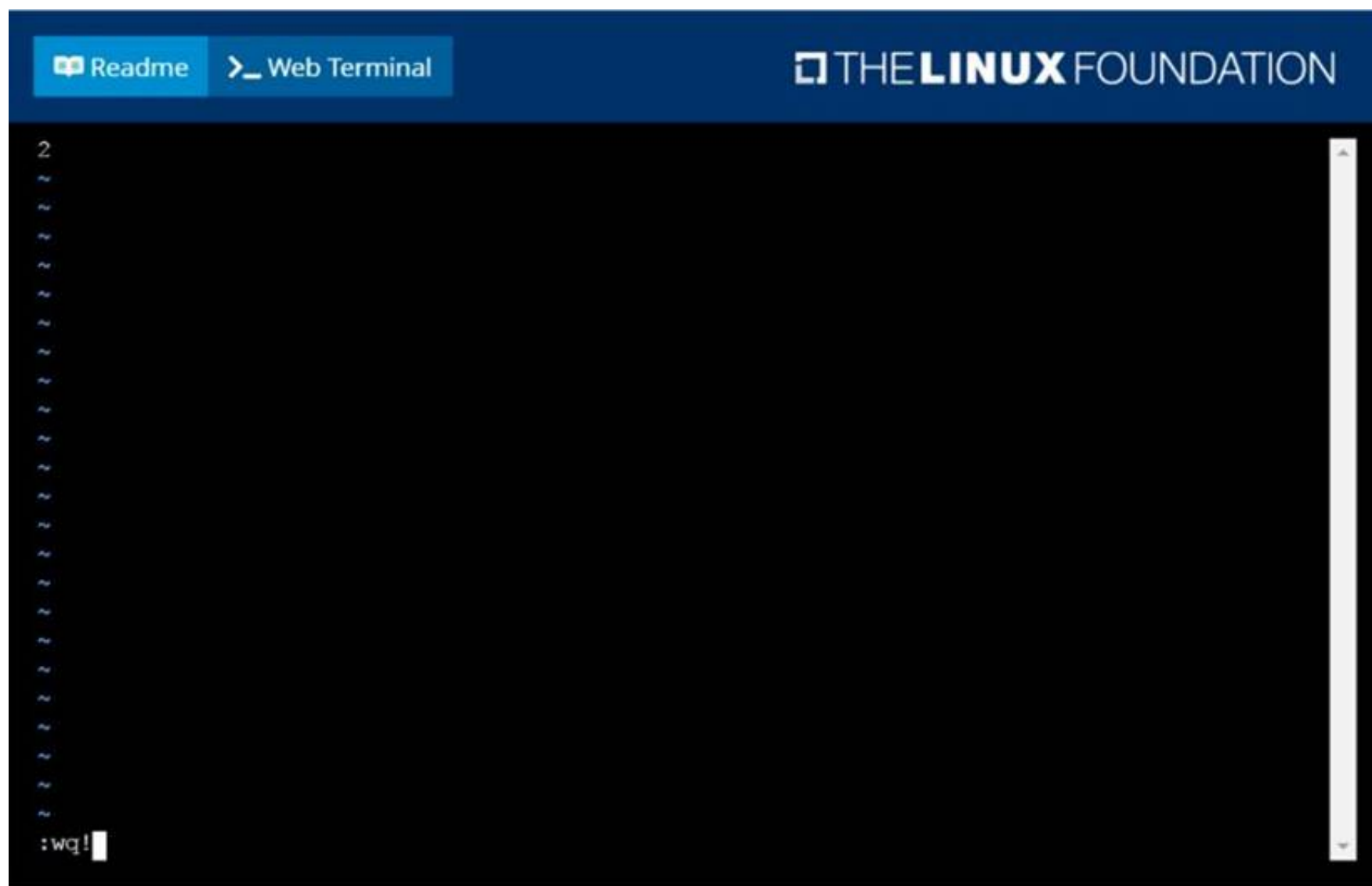**Answer:** A

Explanation:
solution

📖 Readme   >_ Web Terminal   ☐ THE **LINUX** FOUNDATION

```
root@node-1:~# kubectl config use-context wk8s
Switched to context "wk8s".
root@node-1:~# k get nodes
NAME             STATUS     ROLES     AGE    VERSION
wk8s-master-0    Ready      master    77d    v1.18.2
wk8s-node-0      NotReady   <none>    77d    v1.18.2
wk8s-node-1      Ready      <none>    77d    v1.18.2
root@node-1:~# ssh wk8s-node-0
```

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📖 Readme   >_ Web Terminal   ☐ THE **LINUX** FOUNDATION

```
wk8s-node-0      NotReady   <none>    77d    v1.18.2
wk8s-node-1      Ready      <none>    77d    v1.18.2
root@node-1:~# ssh wk8s-node-0
Welcome to Ubuntu 16.04.6 LTS (GNU/Linux 4.4.0-1109-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

 * Are you ready for Kubernetes 1.19? It's nearly here! Try RC3 with
   sudo snap install microk8s --channel=1.19/candidate --classic

   https://microk8s.io/ has docs and details.

4 packages can be updated.
1 update is a security update.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


student@wk8s-node-0:~$ sudo -i
root@wk8s-node-0:~# systemctl  restart kubelet
root@wk8s-node-0:~# systemctl  enable kubelet
```

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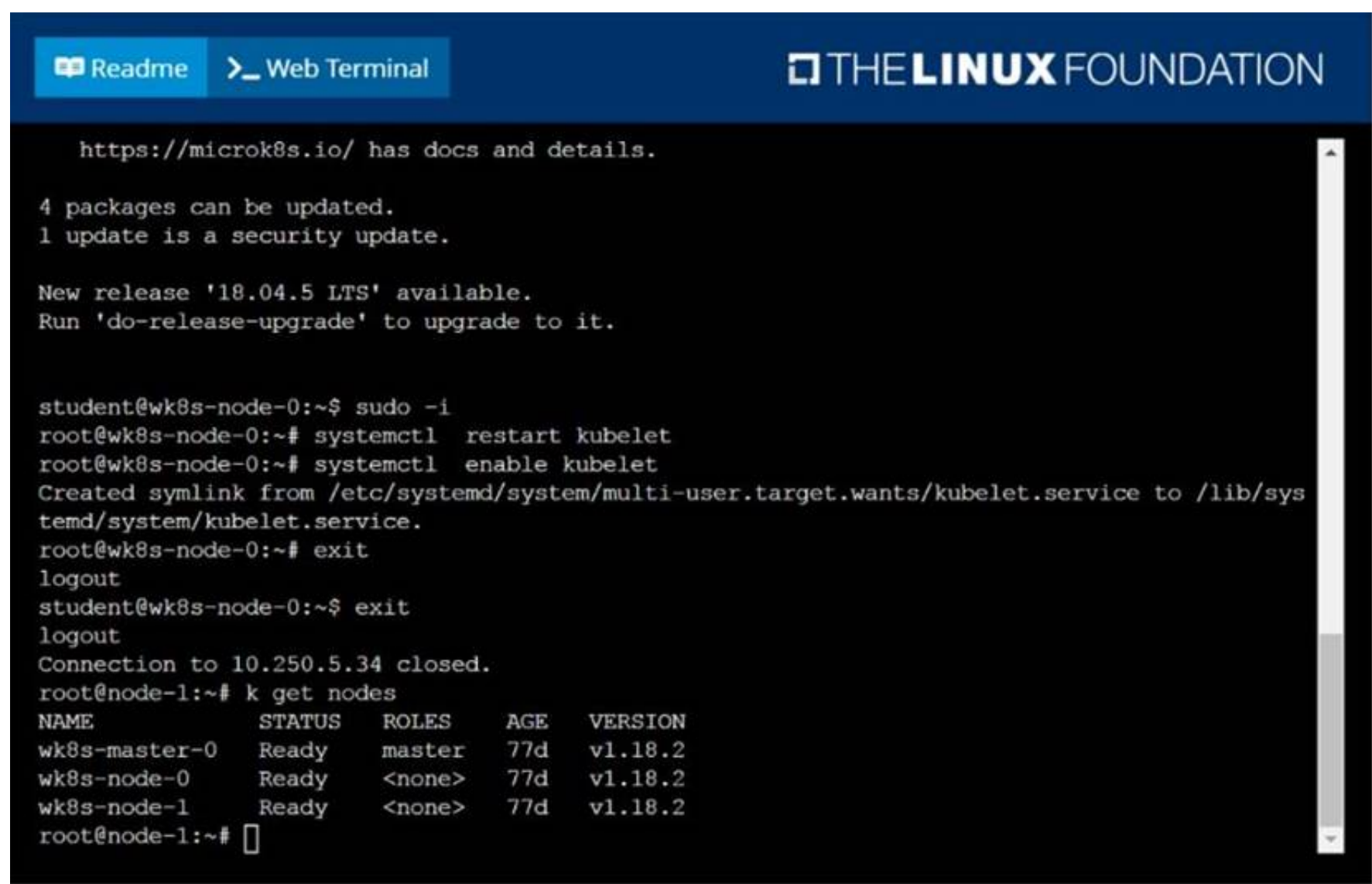
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NEW QUESTION 37
CORRECT TEXT
List all persistent volumes sorted by capacity, saving the full kubectl output to
/opt/KUCC00102/volume_list. Use kubectl 's own functionality for sorting the output, and do not manipulate it any further.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
solution

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NEW QUESTION 39
CORRECT TEXT
Create a persistent volume with name app-data, of capacity 2Gi and access mode ReadWriteMany. The type of volume is hostPath and its location is /srv/app-data.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
solution
Persistent Volume
A persistent volume is a piece of storage in a Kubernetes cluster. PersistentVolumes are a cluster-level resource like nodes, which don't belong to any namespace. It is provisioned by the administrator and has a particular file size. This way, a developer deploying their app on Kubernetes need not know the underlying infrastructure. When the developer needs a certain amount of persistent storage for their application, the system administrator configures the cluster so that they consume the PersistentVolume provisioned in an easy way.
Creating Persistent Volume
kind: PersistentVolumeapiVersion: v1metadata: name:app-dataspec: capacity: # defines the capacity of PV we are creating storage: 2Gi #the amount of storage we are tying to claim accessModes: # defines the rights of the volume we are creating - ReadWriteMany hostPath: path: "/srv/app-data" # path to which we are creating the volume
Challenge
? Create a Persistent Volume named app-data, with access mode ReadWriteMany, storage classname shared, 2Gi of storage capacity and the host path /srv/app-data.

* 2. Save the file and create the persistent volume.

Image for post
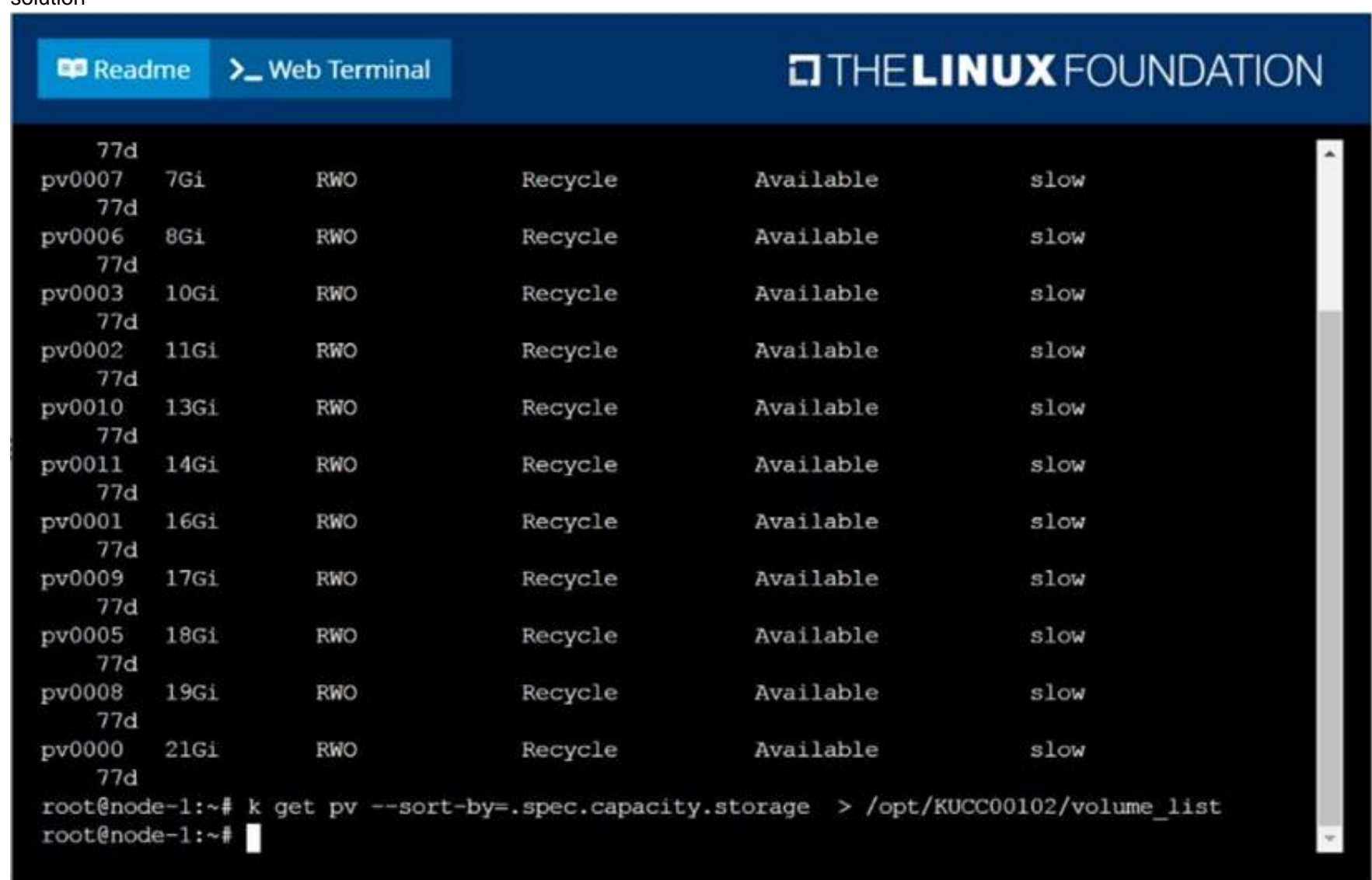* 3. View the persistent volume.

? Our persistent volume status is available meaning it is available and it has not been mounted yet. This status will change when we mount the persistentVolume to a persistentVolumeClaim.
PersistentVolumeClaim
In a real ecosystem, a system admin will create the PersistentVolume then a developer will create a PersistentVolumeClaim which will be referenced in a pod. A PersistentVolumeClaim is created by specifying the minimum size and the access mode they require from the persistentVolume. Challenge
? Create a Persistent Volume Claim that requests the Persistent Volume we had created above. The claim should request 2Gi. Ensure that the Persistent Volume Claim has the same storageClassName as the persistentVolume you had previously created.
kind: PersistentVolumeapiVersion: v1metadata: name:app-data
spec:
accessModes: - ReadWriteMany resources:
requests: storage: 2Gi
storageClassName: shared
* 2. Save and create the pvc
njerry191@cloudshell:~ (extreme-clone-2654111)$ kubect1 create -f app-data.yaml persistentvolumeclaim/app-data created
* 3. View the pvc

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

```
njerry191@cloudshell:~ (extreme-clone-265411)$ 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 44
CORRECT TEXT
Create a busybox pod that runs the command "env" and save the output to "envpod" file

A. Mastered
B. Not Mastered

Answer: A

Explanation:
kubectl run busybox --image=busybox --restart=Never –-rm -it -- env > envpod.yaml

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 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
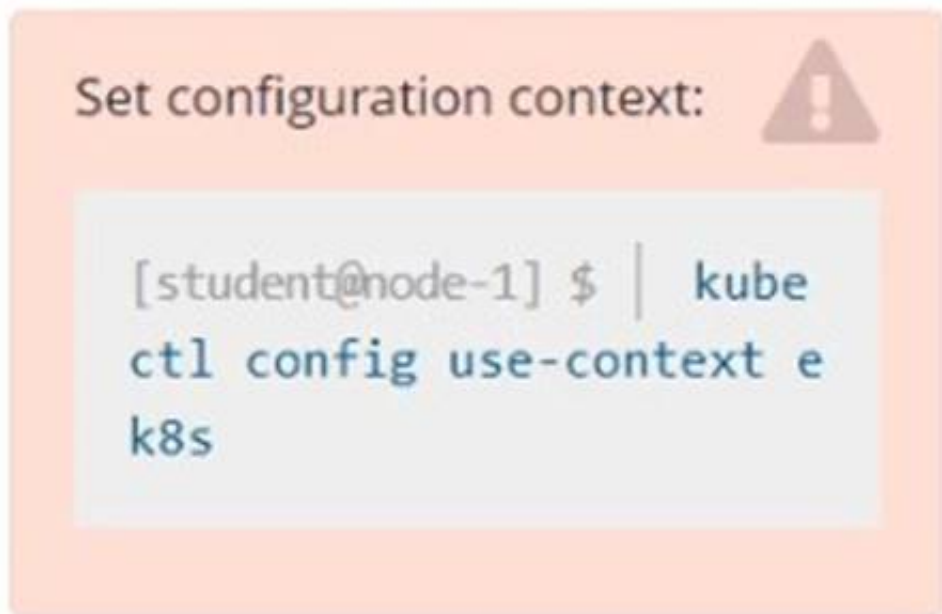kubectl exec -it nginx -- sh -c 'echo $var1'
or
kubectl describe po nginx | grep value1

NEW QUESTION 54
CORRECT TEXT
Score: 4%

Set configuration context:

⚠️

[student@node-1] $ | kube
ctl config use-context e
k8s

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 59
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