Linux-Foundation

Exam Questions CKA

Certified Kubernetes Administrator (CKA) Program

NEW QUESTION 1
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 2
Create a deployment as follows:
- Name:nginx-random
- Exposed via a servicenginx-random
- Ensure that the service & podare accessible via theirrespective DNS records
- The container(s) within anypod(s) running as a part of thisdeployment should use thenginxImage
Next, use the utilitynslookupto lookup the DNS records of the service &pod and write the output to
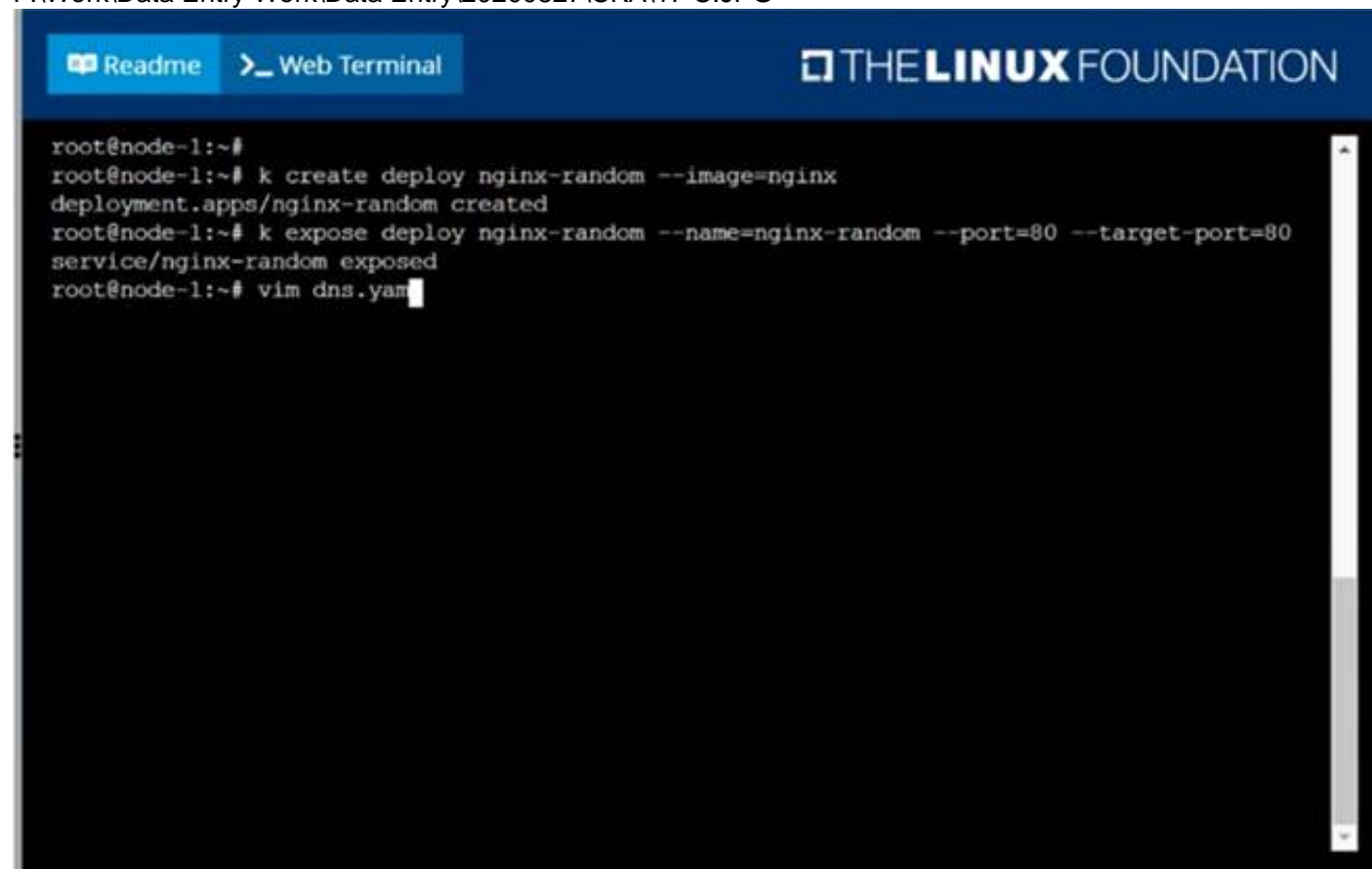/opt/KUNW00601/service.dnsand/opt/KUNW00601/pod.dnsrespectively.
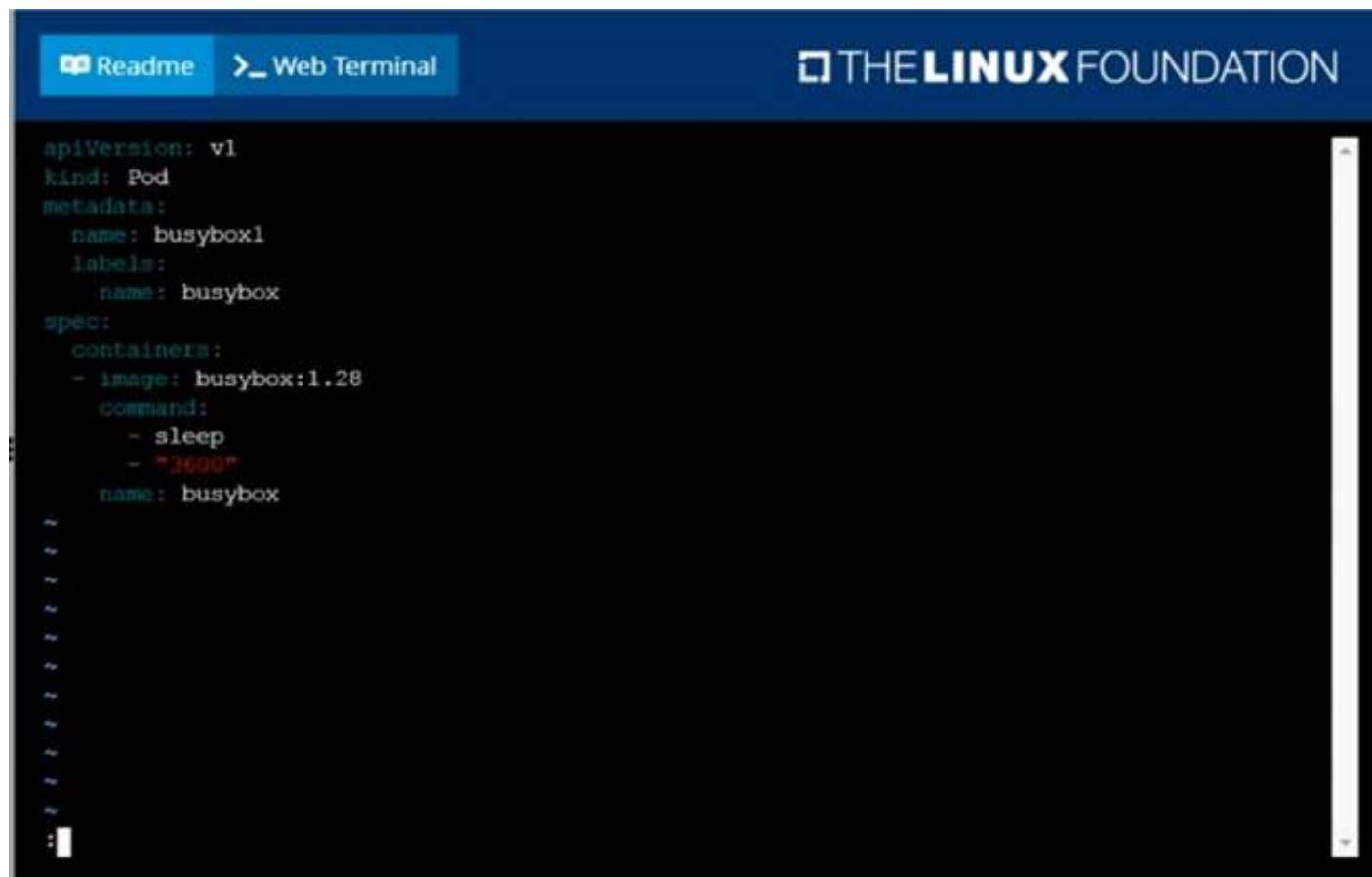
A. Mastered
B. Not Mastered

Answer: A

Explanation:

Solution:
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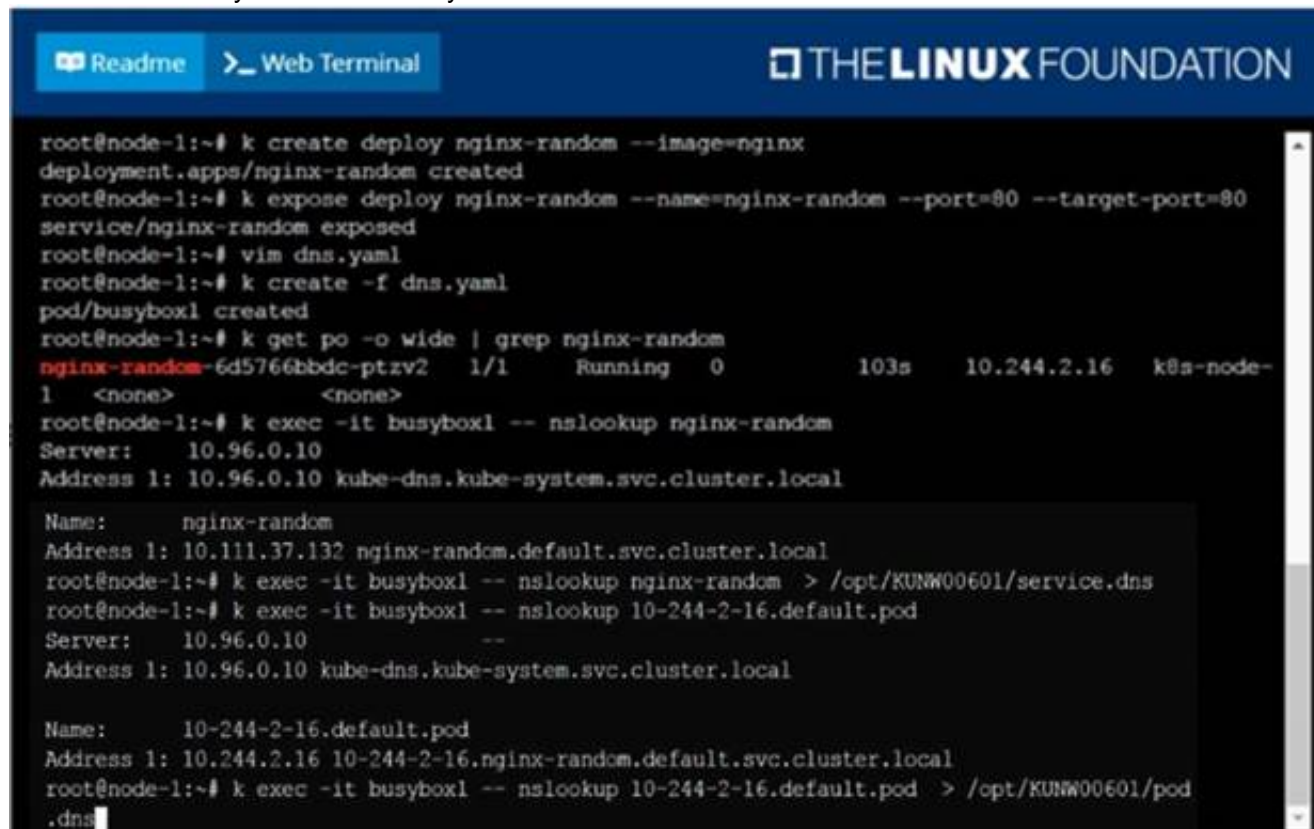

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```
apiVersion: v1
kind: Pod
metadata:
  name: busybox1
  labels:
    name: busybox
spec:
  containers:
  - image: busybox:1.28
    command:
      - sleep
      - "3600"
    name: busybox
~
~
~
~
~
~
~
~
~
~
:
```

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```
root@node-1:~# k create deploy nginx-random --image=nginx
deployment.apps/nginx-random created
root@node-1:~# k expose deploy nginx-random --name=nginx-random --port=80 --target-port=80
service/nginx-random exposed
root@node-1:~# vim dns.yaml
root@node-1:~# k create -f dns.yaml
pod/busybox1 created
root@node-1:~# k get po -o wide | grep nginx-random
nginx-random-6d5766bbdc-ptzv2   1/1     Running   0        103s    10.244.2.16   k8s-node-
1   <none>             <none>
root@node-1:~# k exec -it busybox1 -- nslookup nginx-random
Server:     10.96.0.10
Address 1: 10.96.0.10 kube-dns.kube-system.svc.cluster.local

Name:      nginx-random
Address 1: 10.111.37.132 nginx-random.default.svc.cluster.local
root@node-1:~# k exec -it busybox1 -- nslookup nginx-random  > /opt/KUNW00601/service.dns
root@node-1:~# k exec -it busybox1 -- nslookup 10-244-2-16.default.pod
Server:     10.96.0.10         --
Address 1: 10.96.0.10 kube-dns.kube-system.svc.cluster.local

Name:      10-244-2-16.default.pod
Address 1: 10.244.2.16 10-244-2-16.nginx-random.default.svc.cluster.local
root@node-1:~# k exec -it busybox1 -- nslookup 10-244-2-16.default.pod  > /opt/KUNW00601/pod
.dns
```

NEW QUESTION 3
Create a pod that echo ??hello world?? and then exists. Have the pod deleted automatically when it??s completed

A. Mastered
B. Not Mastered

Answer: A

Explanation:
kubectl run busybox --image=busybox -it --rm --restart=Never -
/bin/sh -c 'echo hello world'
kubectl get po # You shouldn't see pod with the name "busybox"

NEW QUESTION 4
Given a partially-functioningKubernetes cluster, identifysymptoms of failure on the cluster.
Determine the node, the failingservice, and take actions to bring upthe failed service and restore thehealth of the cluster. Ensure that anychanges are made permanently.
You cansshto the relevant Inodes (bk8s-master-0orbk8s-node-0) using:
[student@node-1] $ ssh<nodename>
You can assume elevatedprivileges on any node in thecluster with the followingcommand:
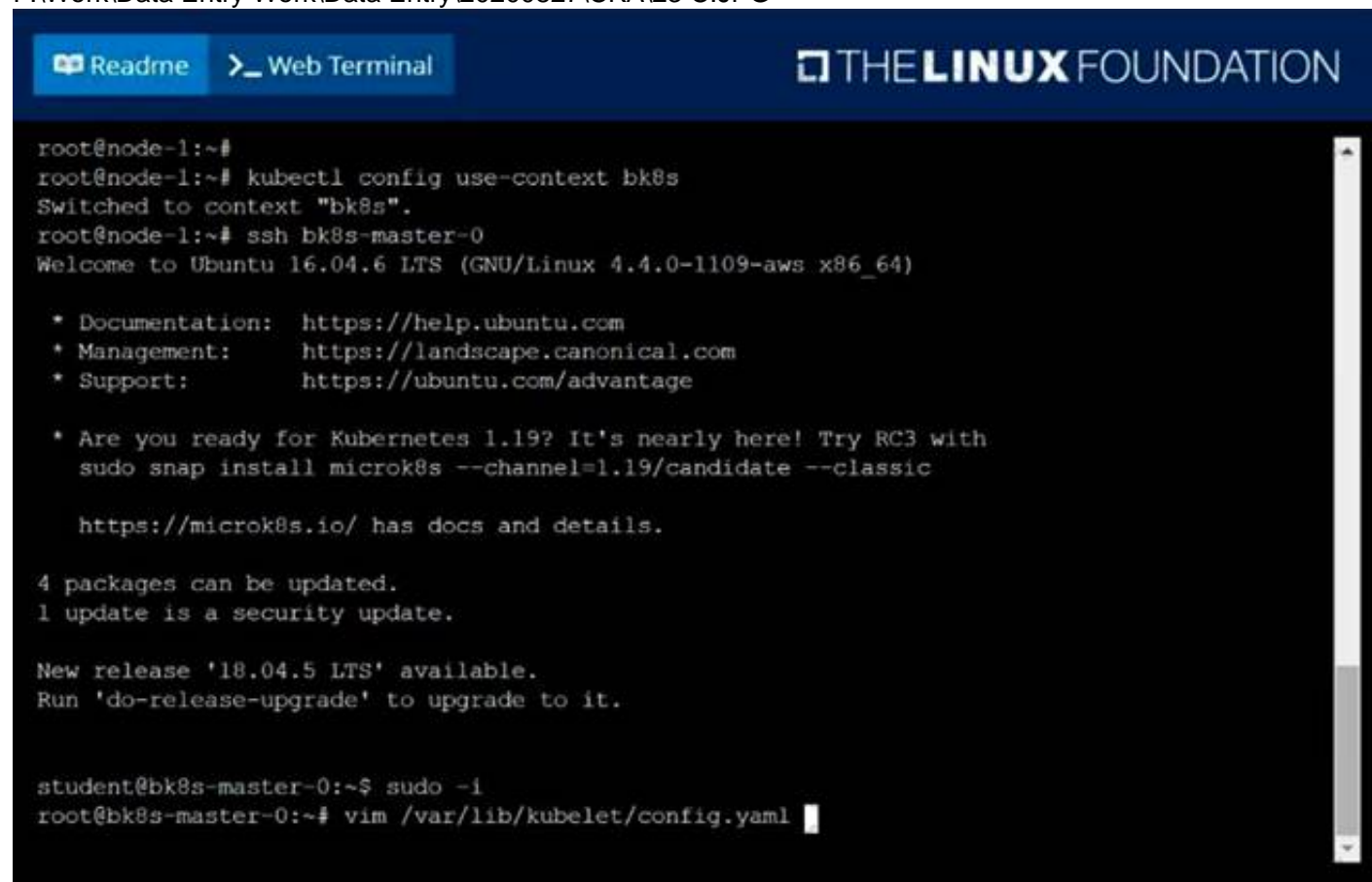[student@nodename] $ | sudo ?Ci

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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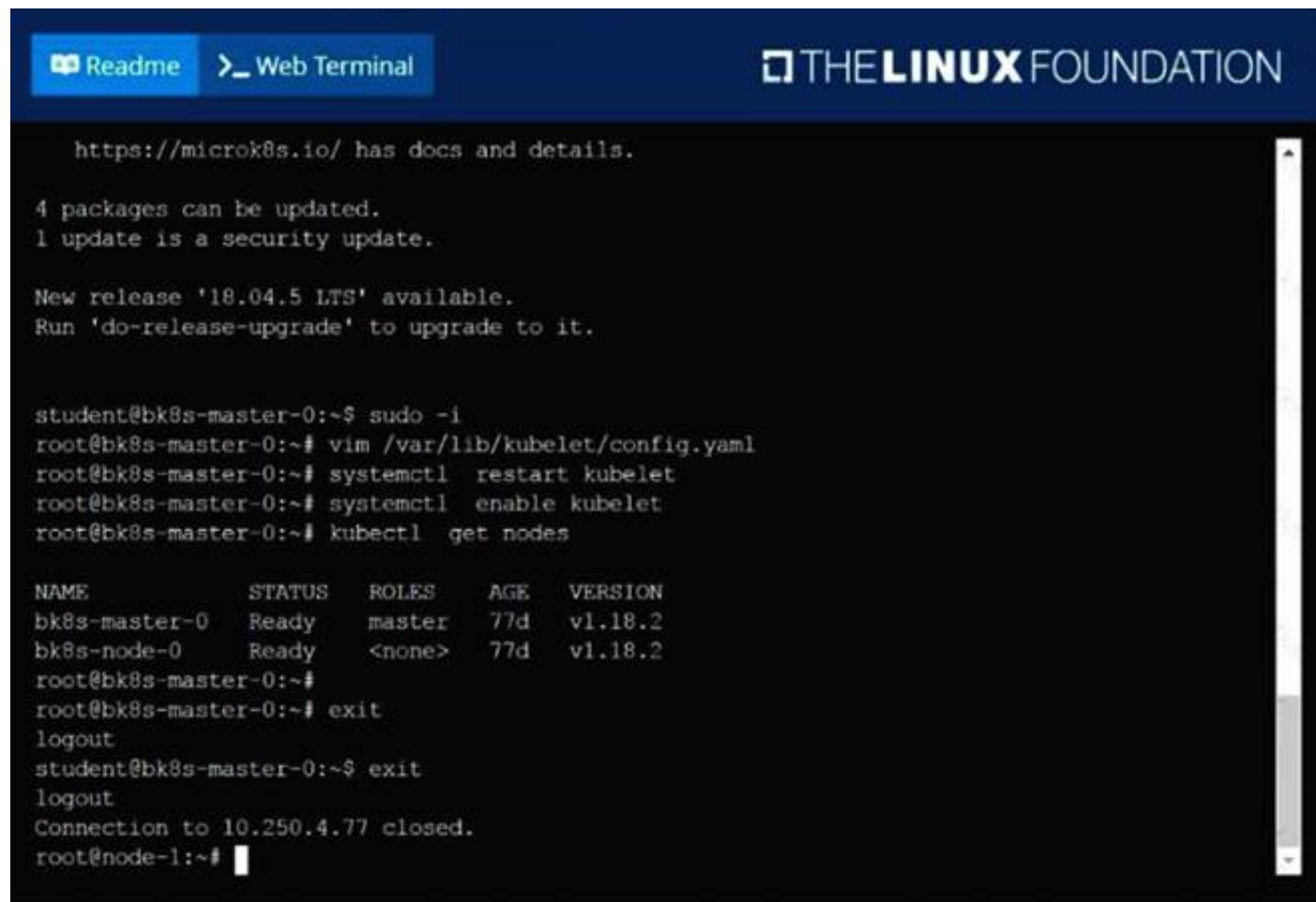

```
authorization:
  mode: Webhook
  webhook:
    cacheAuthorizedTTL: 0s
    cacheUnauthorizedTTL: 0s
clusterDNS:
- 10.96.0.10
clusterDomain: cluster.local
cpuManagerReconcilePeriod: 0s
evictionPressureTransitionPeriod: 0s
fileCheckFrequency: 0s
healthzBindAddress: 127.0.0.1
healthzPort: 10248
httpCheckFrequency: 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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```
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
root@bk8s-master-0:~# systemctl restart kubelet
root@bk8s-master-0:~# systemctl enable kubelet
root@bk8s-master-0:~# kubectl get nodes

NAME            STATUS    ROLES     AGE    VERSION
bk8s-master-0   Ready     master    77d    v1.18.2
bk8s-node-0     Ready     <none>    77d    v1.18.2
root@bk8s-master-0:~#
root@bk8s-master-0:~# exit
logout
student@bk8s-master-0:~$ exit
logout
Connection to 10.250.4.77 closed.
root@node-1:~#
```

NEW QUESTION 5
Create a deployment as follows:
➢ Name:nginx-app
➢ Using containernginxwithversion 1.11.10-alpine
➢ The deployment should contain3replicas
Next, deploy the application with newversion1.11.13-alpine, byperforming a rolling update.
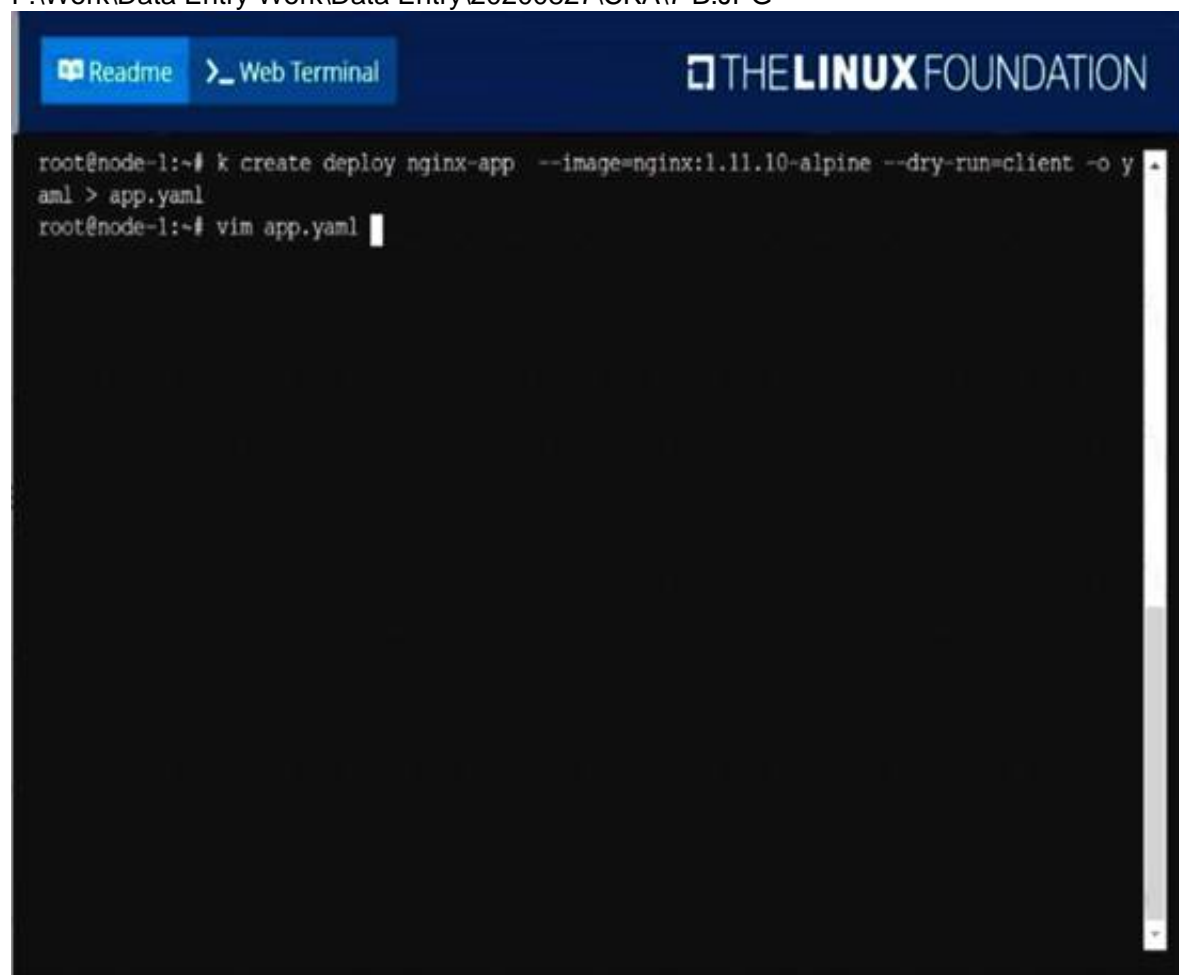Finally, rollback that update to theprevious version1.11.10-alpine.

A. Mastered
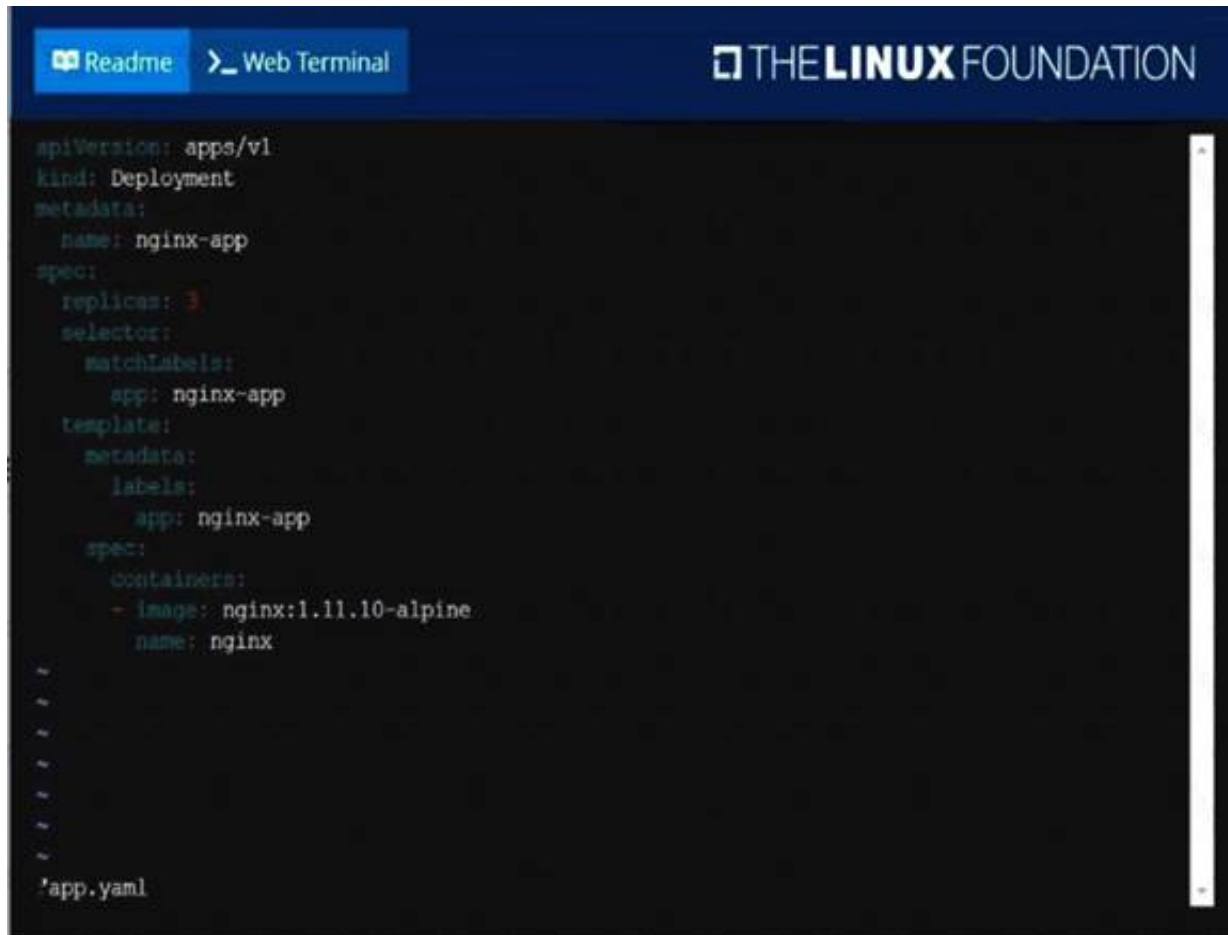B. Not Mastered

Answer: A

Explanation:
solution
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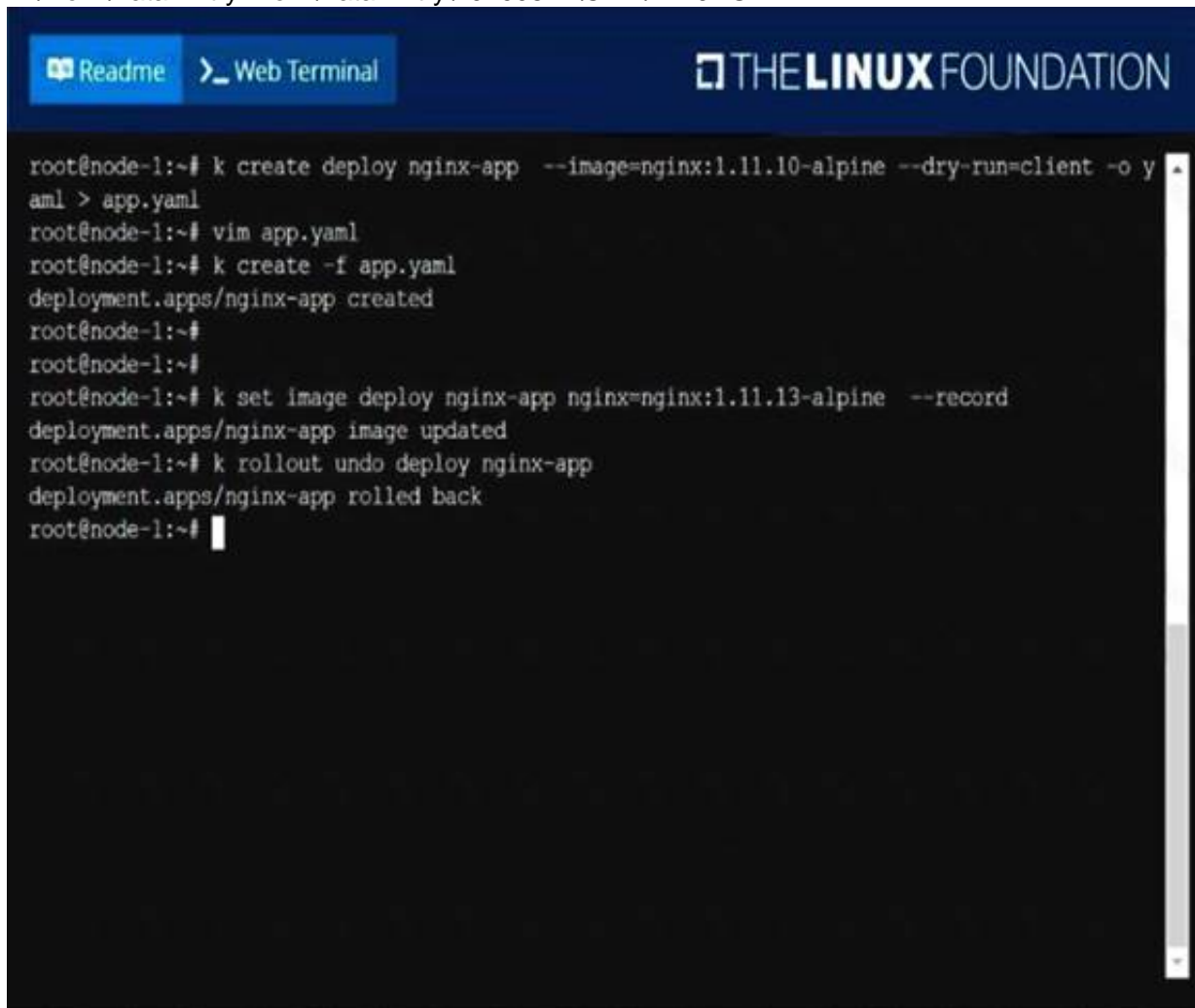


```
root@node-1:~# k create deploy nginx-app  --image=nginx:1.11.10-alpine --dry-run=client -o y
aml > app.yaml
root@node-1:~# vim app.yaml
```

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NEW QUESTION 6
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 7
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 -nengineering-f ?C
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 8
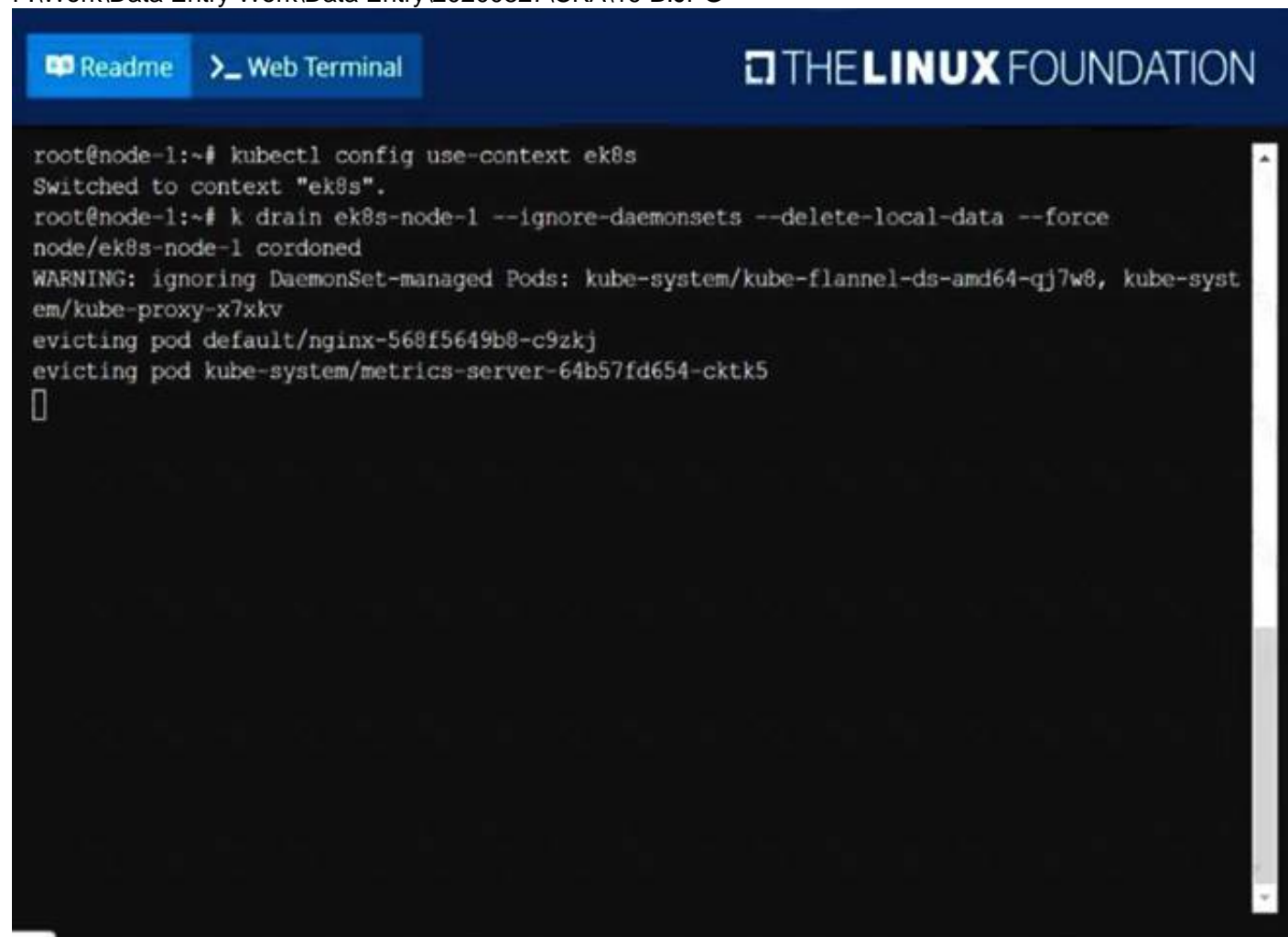Set the node named ek8s-node-1as unavailable and reschedule all the pods running on it.

A. Mastered
B. Not Mastered

Answer: A

Explanation:

solution
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NEW QUESTION 9
Ensure a single instance of podnginxis running on each node of theKubernetes cluster wherenginxalso represents the Image name whichhas to be used. Do not override anytaints currently in place.
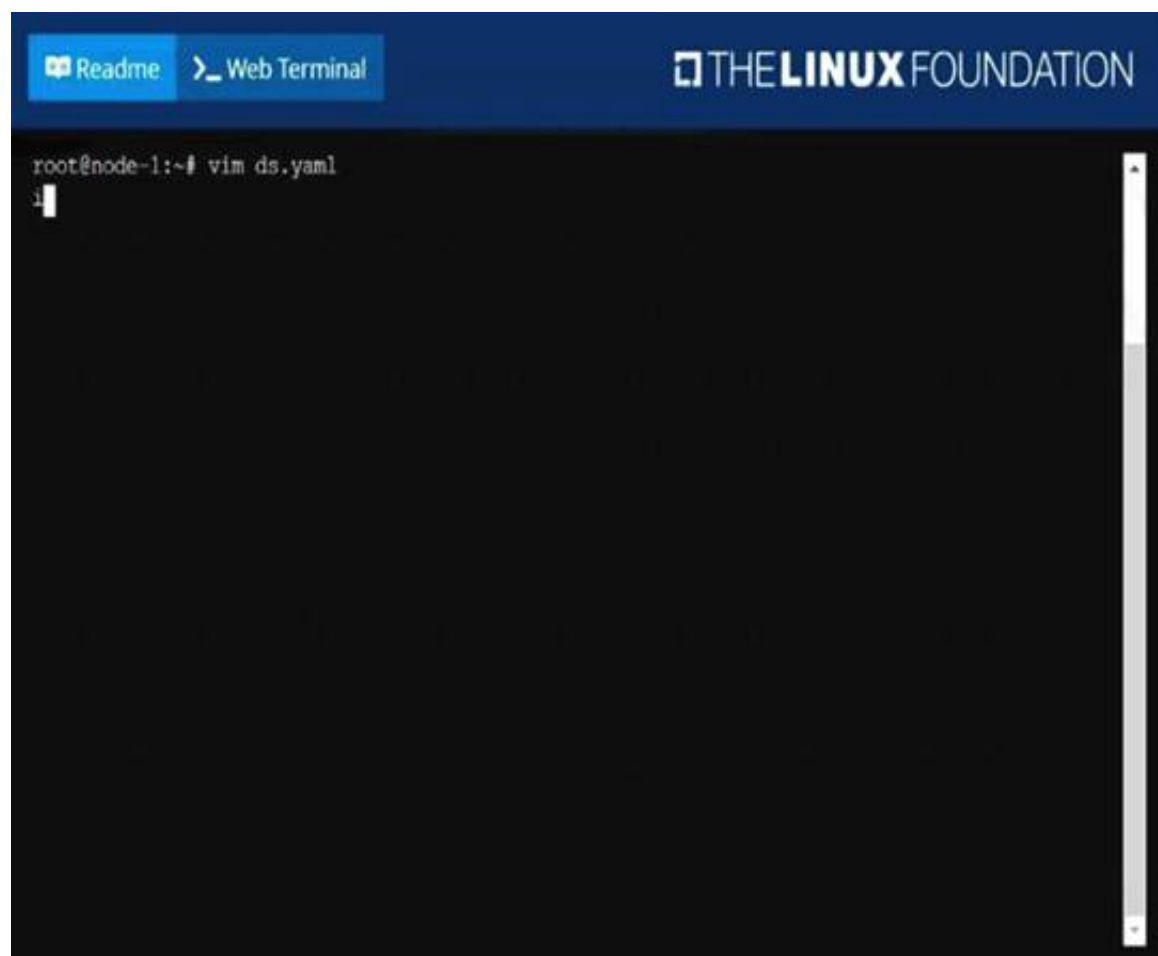UseDaemonSetto complete thistask and useds-kusc00201asDaemonSet name.
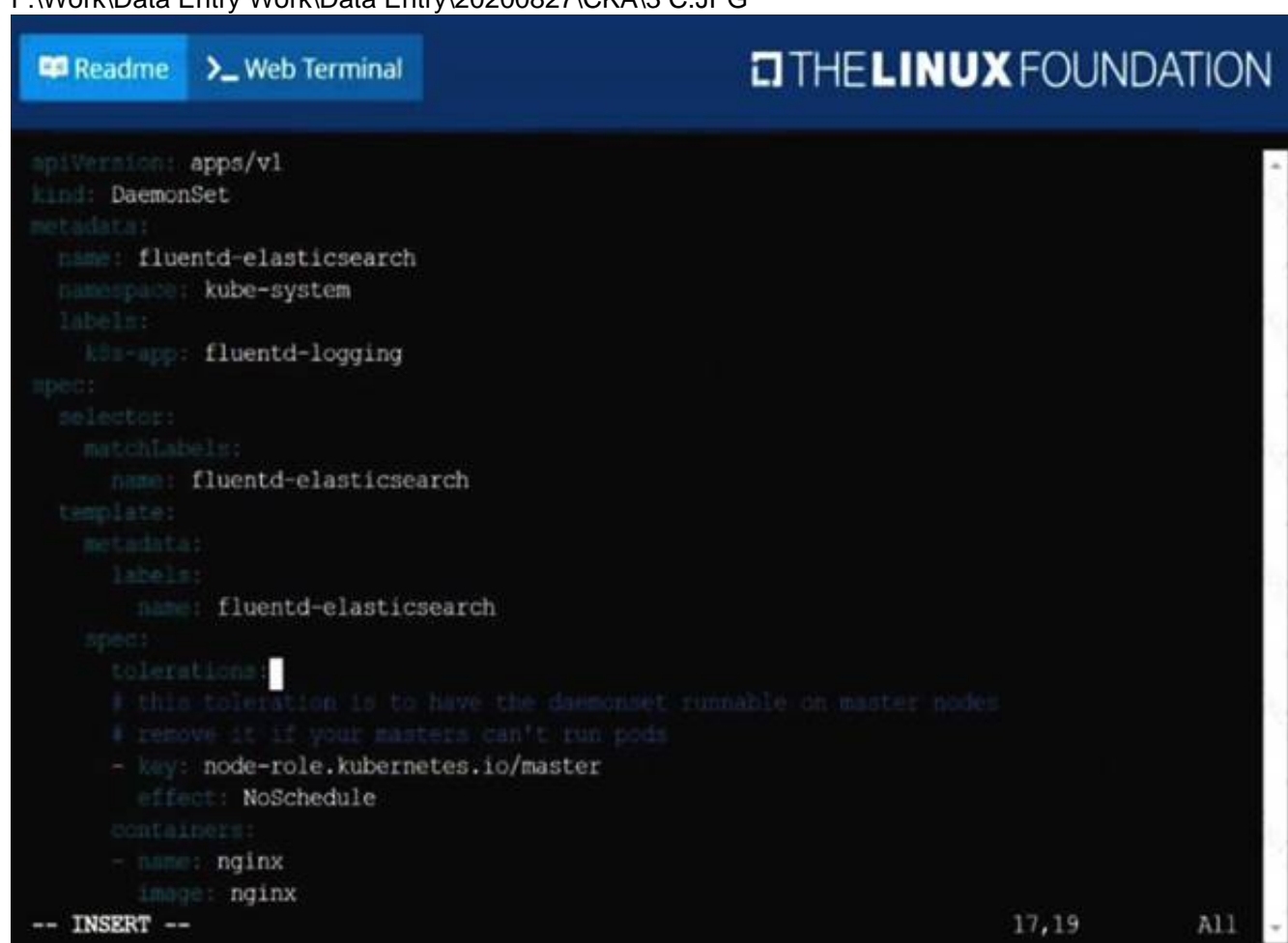
A. Mastered
B. Not Mastered

Answer: A

Explanation:
 solution
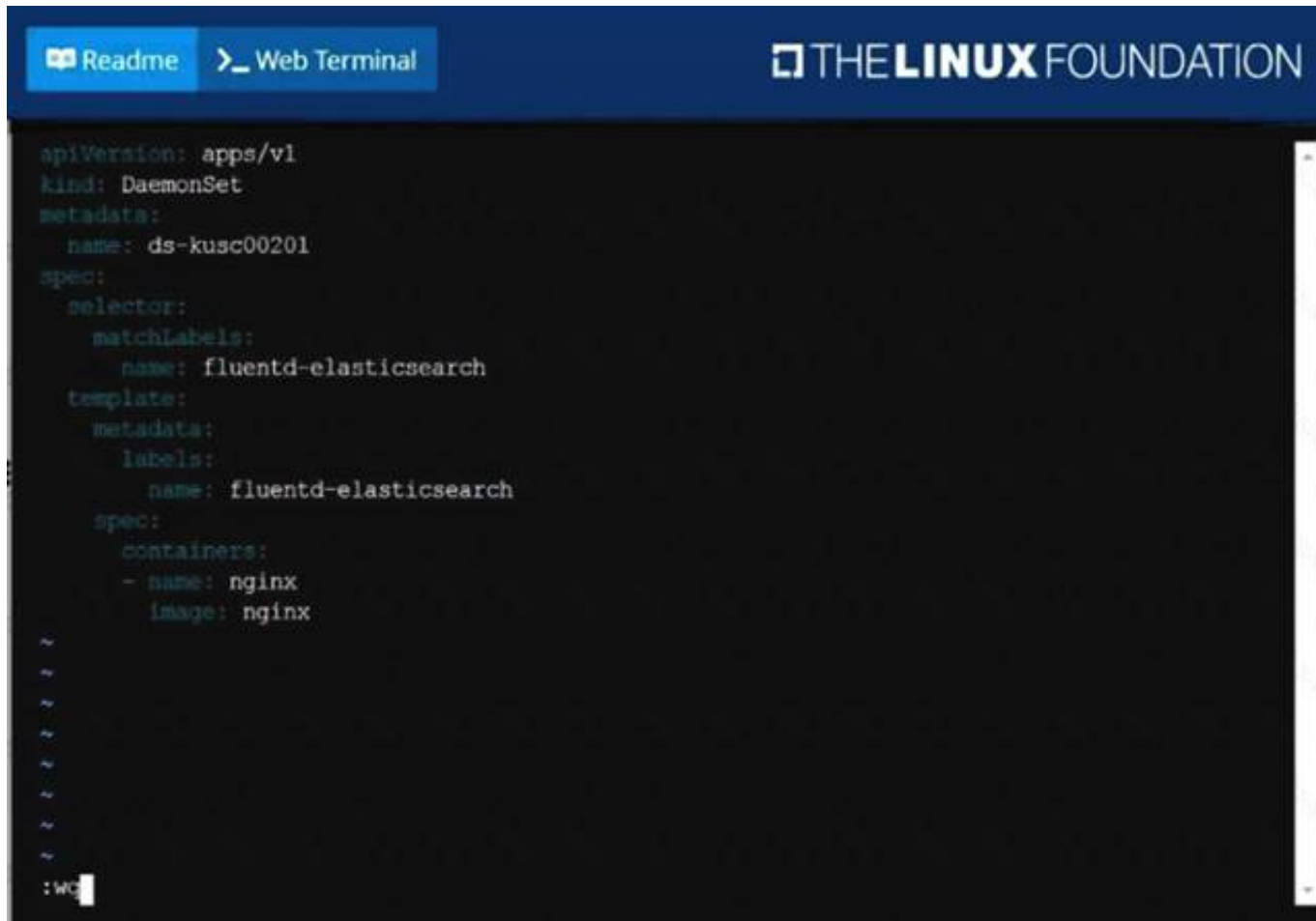F:\Work\Data Entry Work\Data Entry\20200827\CKA\3 B.JPG

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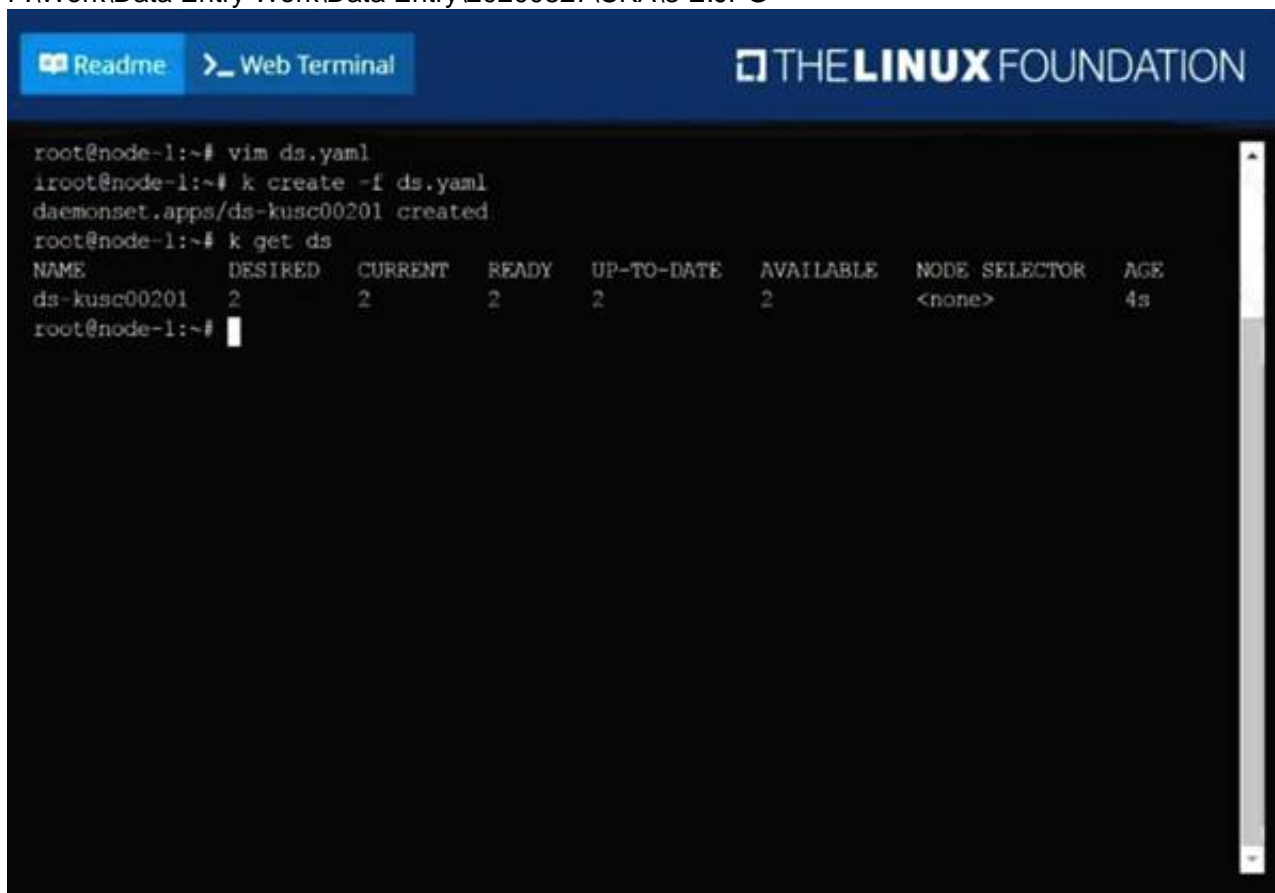
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NEW QUESTION 10
Configure the kubelet systemd-managed service, on the nodelabelled withname=wk8s-node-1, tolaunch a pod containing a singlecontainer of Imagehttpdnamedwebtoolautomatically. Any spec filesrequired should be placed in the/etc/kubernetes/manifestsdirectoryon the node.
You canssh to theappropriate node using:
[student@node-1] $ sshwk8s-node-1
You can assume elevatedprivileges on the node with thefollowing command:
[student@wk8s-node-1] $ |sudo ?Ci

A. Mastered
B. Not Mastered

Answer: A

Explanation:
 solution
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Readme **>_ Web Terminal** **THE LINUX FOUNDATION**

```
root@node-1:~#
root@node-1:~# kubectl config use-context wk8s
Switched to context "wk8s".
root@node-1:~# ssh wk8s-node-1
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
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Run 'do-release-upgrade' to upgrade to it.


student@wk8s-node-1:~$ sudo -i
root@wk8s-node-1:~# vim /var/lib/kubelet/config.yaml
```
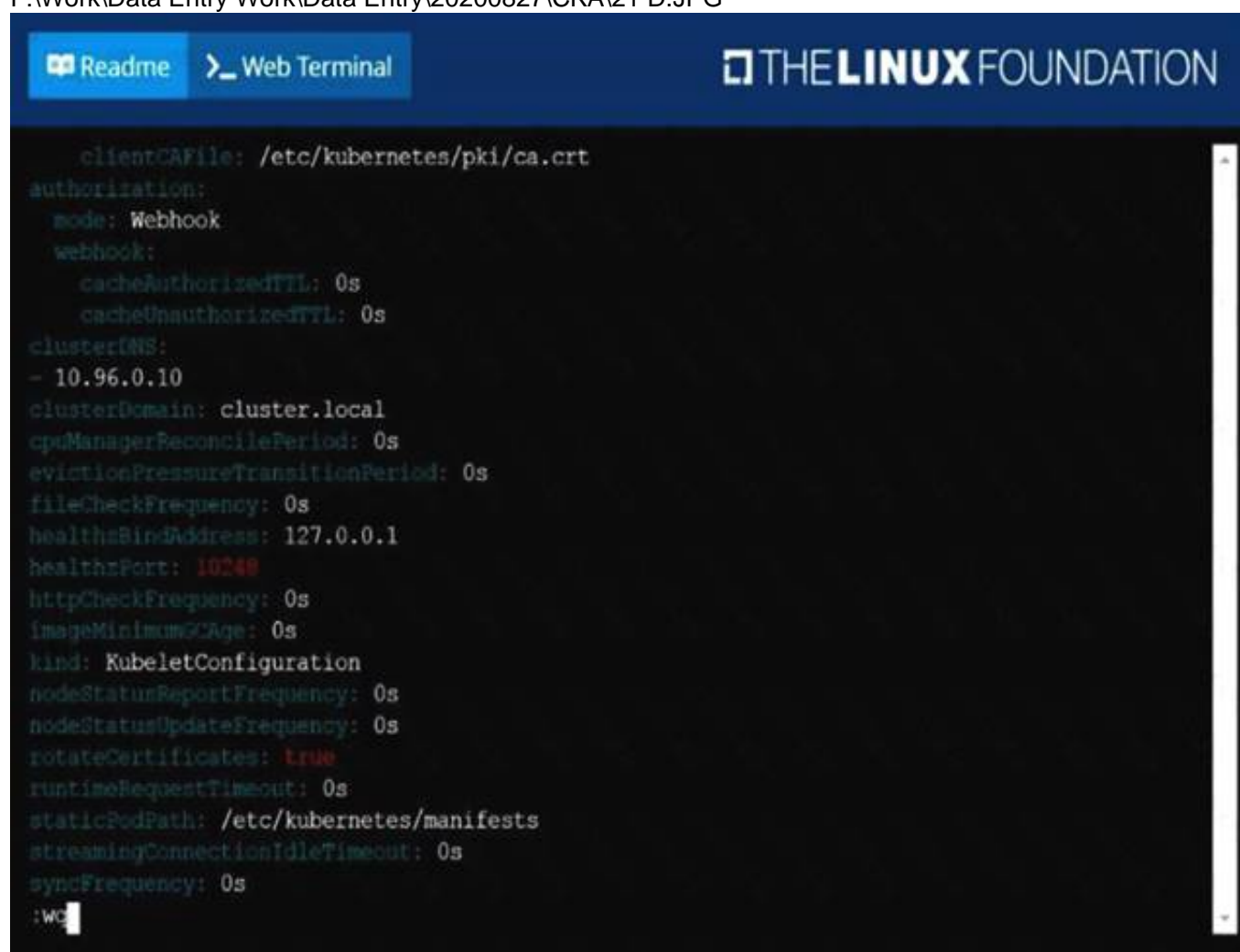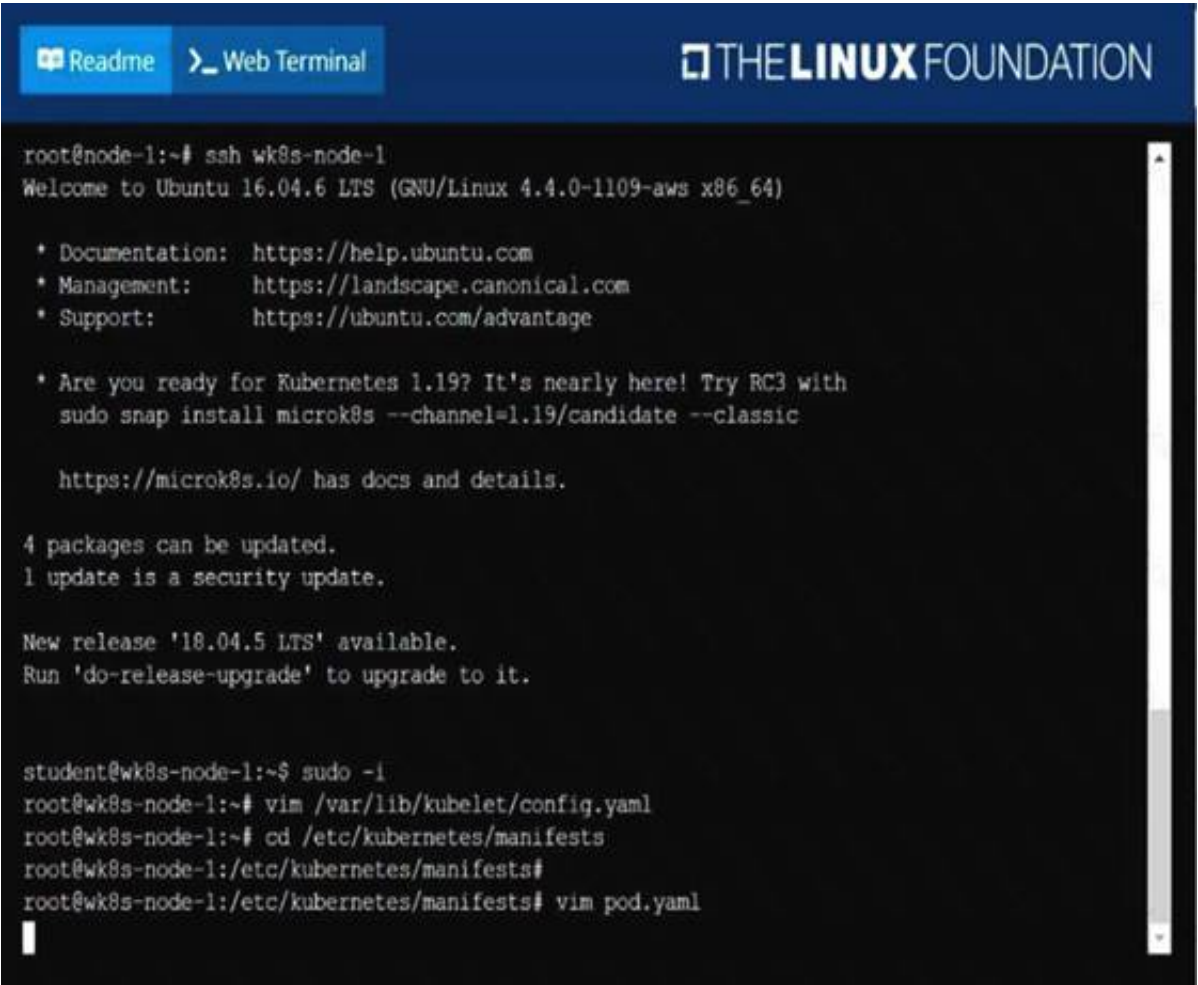
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Readme **>_ Web Terminal** **THE LINUX FOUNDATION**
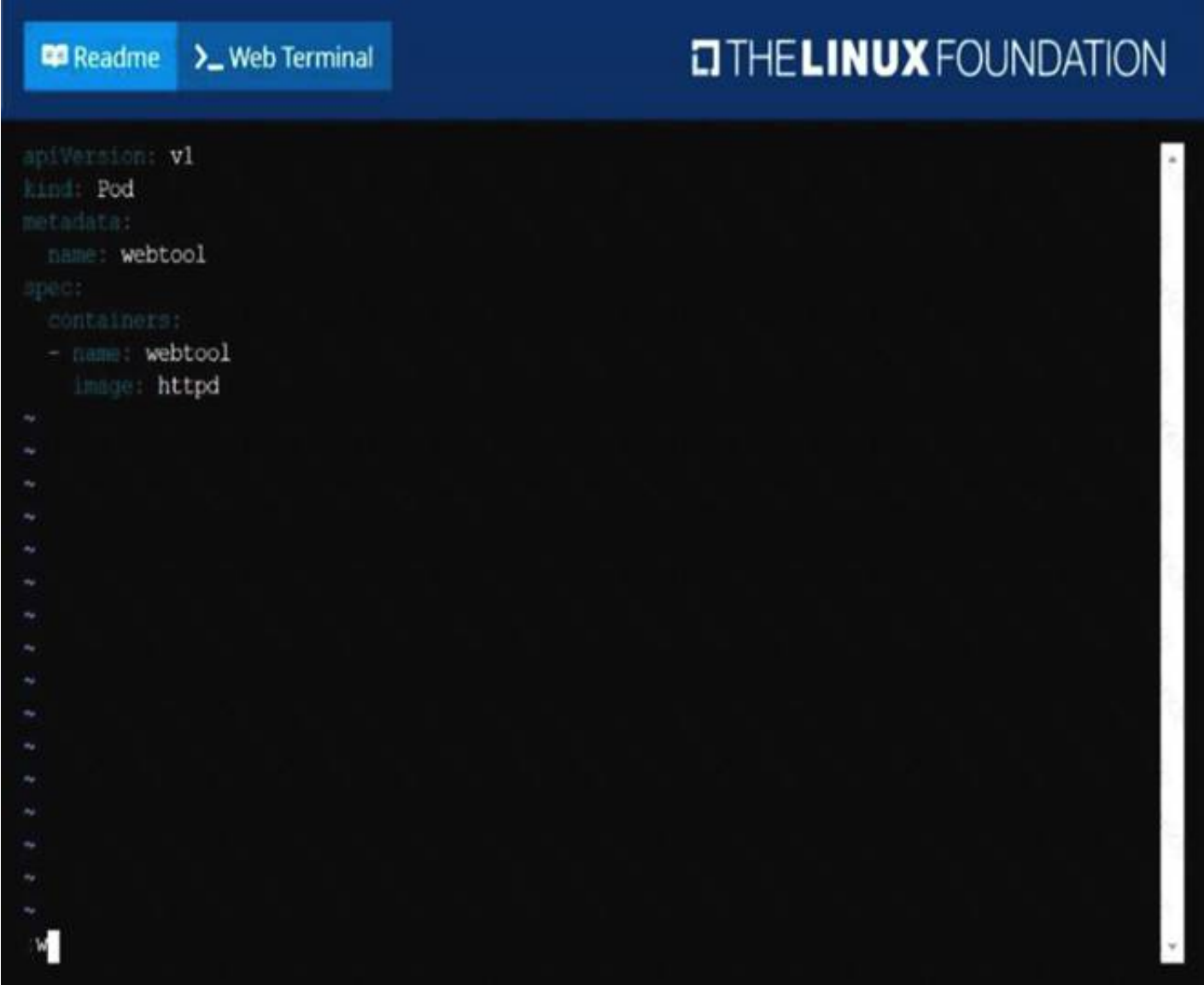
```
    clientCAFile: /etc/kubernetes/pki/ca.crt
authorization:
  mode: Webhook
  webhook:
    cacheAuthorizedTTL: 0s
    cacheUnauthorizedTTL: 0s
clusterDNS:
- 10.96.0.10
clusterDomain: cluster.local
cpuManagerReconcilePeriod: 0s
evictionPressureTransitionPeriod: 0s
fileCheckFrequency: 0s
healthzBindAddress: 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
:wq
```
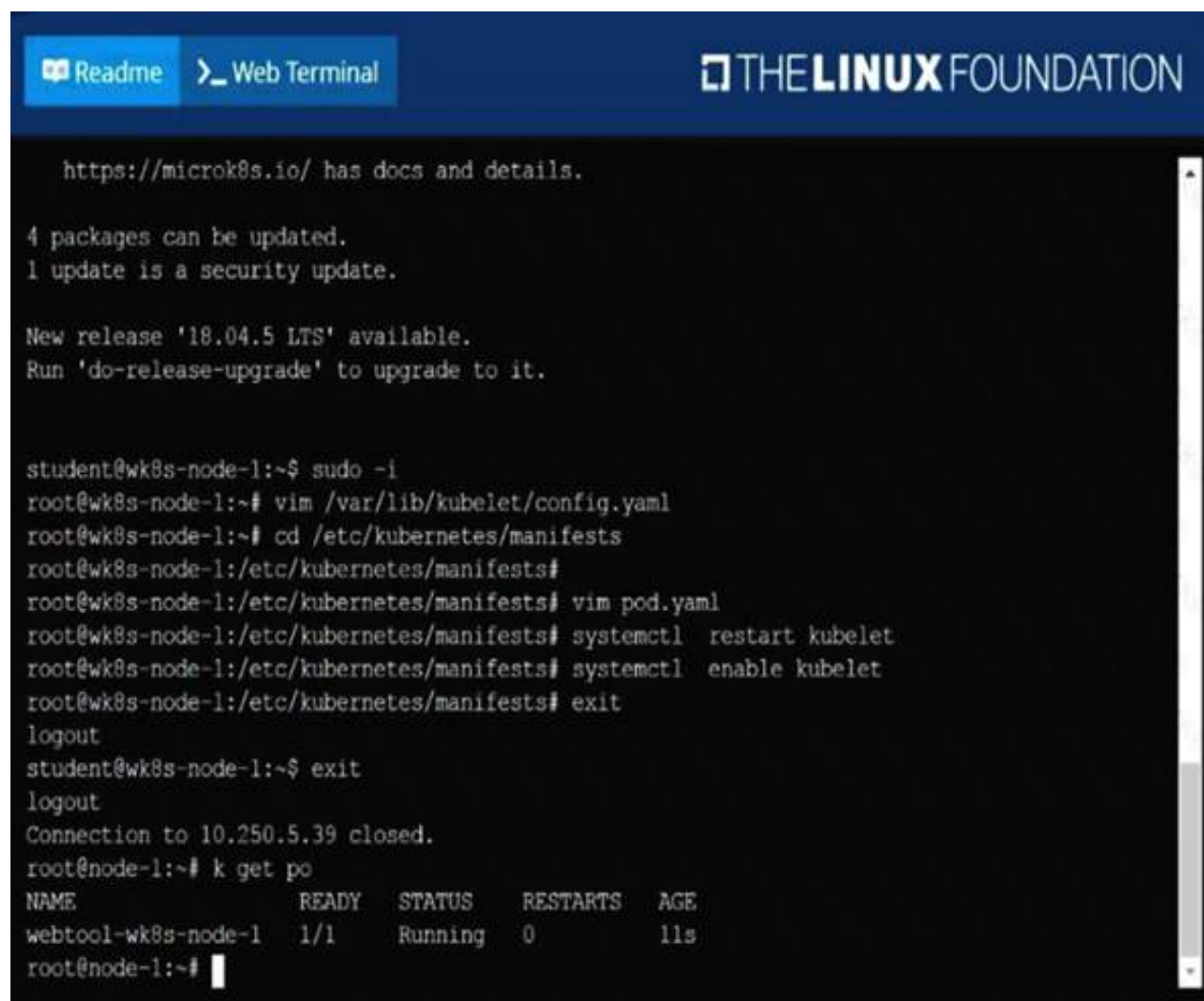
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```
root@node-1:~# ssh wk8s-node-1
Welcome to Ubuntu 16.04.6 LTS (GNU/Linux 4.4.0-1109-aws x86_64)

 * 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-1:~$ sudo -i
root@wk8s-node-1:~# vim /var/lib/kubelet/config.yaml
root@wk8s-node-1:~# cd /etc/kubernetes/manifests
root@wk8s-node-1:/etc/kubernetes/manifests#
root@wk8s-node-1:/etc/kubernetes/manifests# vim pod.yaml
```

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```
apiVersion: v1
kind: Pod
metadata:
  name: webtool
spec:
  containers:
  - name: webtool
    image: httpd
~
~
~
~
~
~
~
~
~
~
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~
~
:w
```

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NEW QUESTION 10
From the pod labelname=cpu-utilizer, find podsrunning high CPU workloads and
write the name of the pod consumingmost CPU to thefile/opt/KUTR00102/KUTR00102.txt(which already exists).
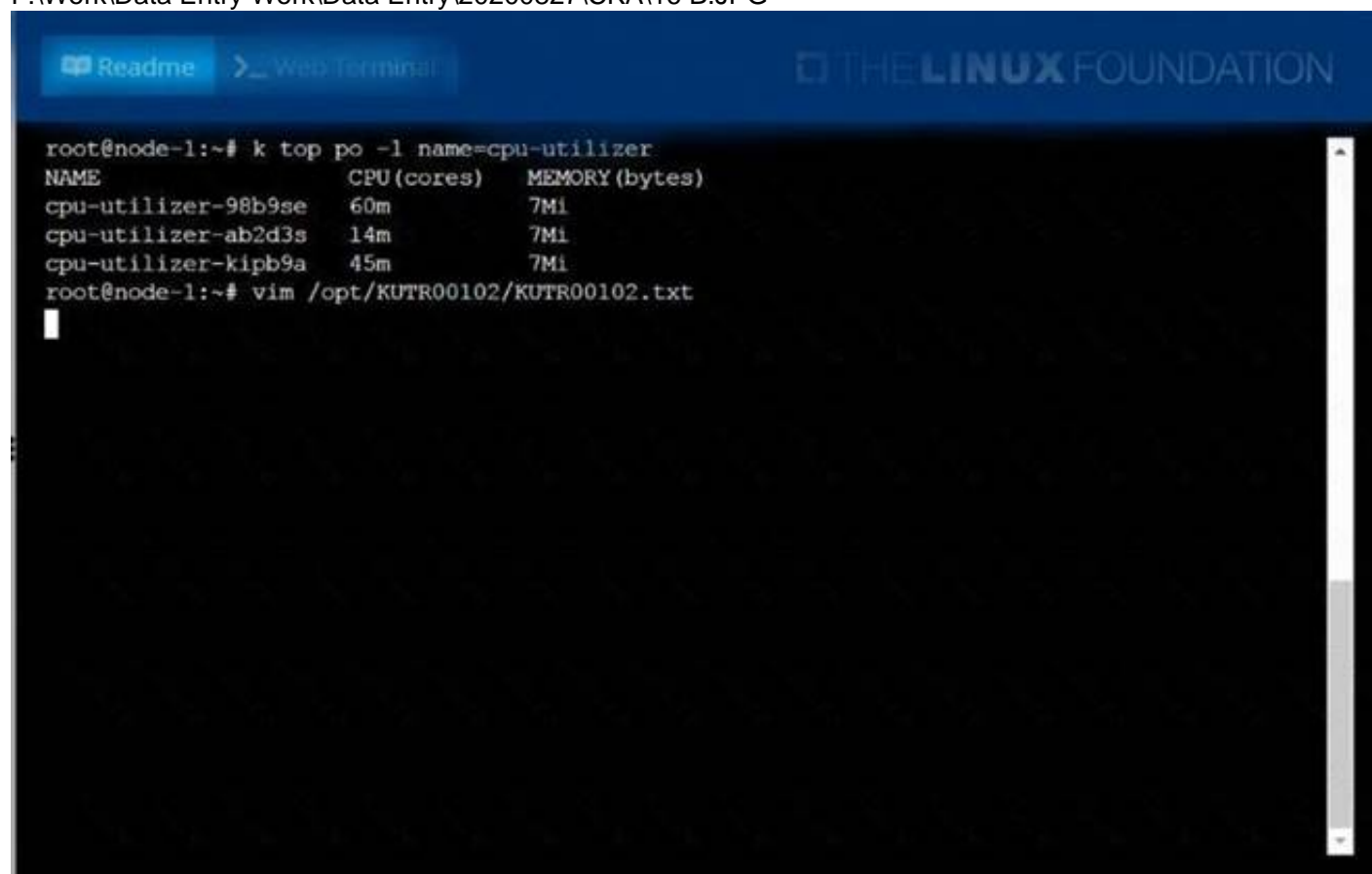
A. Mastered
B. Not Mastered

Answer: A

Explanation:
 solution
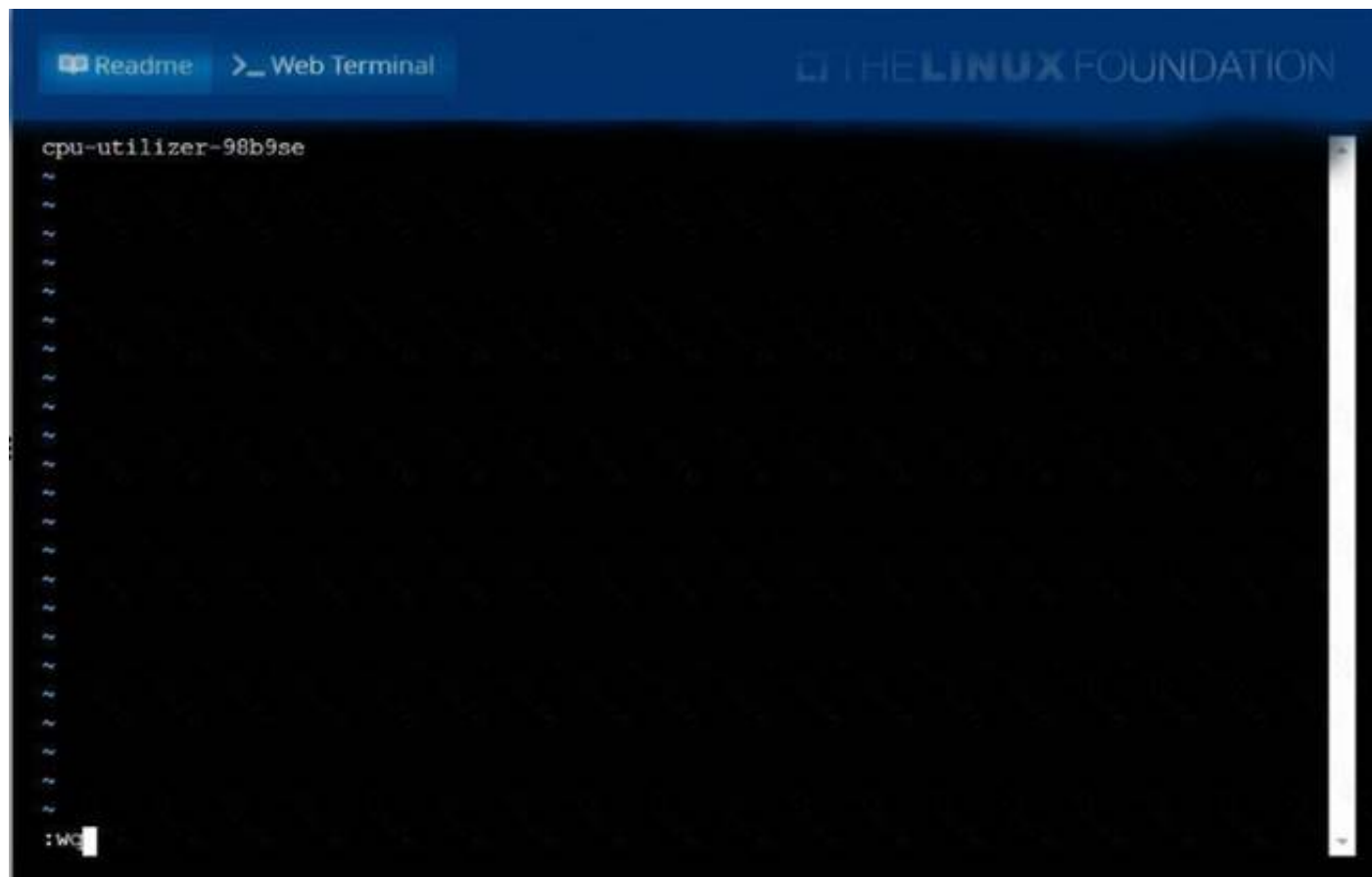F:\Work\Data Entry Work\Data Entry\20200827\CKA\16 B.JPG

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NEW QUESTION 12
For this item, you will havetosshto the nodesik8s-master-0andik8s-node-0and complete all tasks on thesenodes. Ensure that you return tothe base node (hostname:node-1) when you havecompleted this item.
Context
As an administrator of a smalldevelopment team, you have beenasked to set up a Kubernetes clusterto test the viability of a newapplication.
Task
You must usekubeadmto performthis task. Anykubeadminvocationswill require the use of the
--ignore-preflight-errors=alloption.
≫ Configure thenodeik8s-master-Oas a masternode. .
≫ Join the nodeik8s-node-otothe cluster.

A. Mastered
B. Not Mastered

Answer: A

Explanation:
solution
You must use thekubeadmconfiguration file located at/etc/kubeadm.confwhen initializingyour cluster.
You may use any CNI pluginto complete this task, but ifyou don't have your favouriteCNI plugin's manifest URL athand, Calico is one
popularoption:https://docs.projectcalico.org/v3.14/manifests/calico.yaml
Docker is already installedon both nodes andapthasbeen configured so that you caninstall the required tools.

NEW QUESTION 15
Create a snapshot of theetcdinstance running athttps://127.0.0.1:2379, saving thesnapshot to the file path /srv/data/etcd-snapshot.db.
The following TLScertificates/key are suppliedfor connecting to the server withetcdctl:
≫ CA certificate:/opt/KUCM00302/ca.crt
≫ Client certificate:/opt/KUCM00302/etcd-client.crt
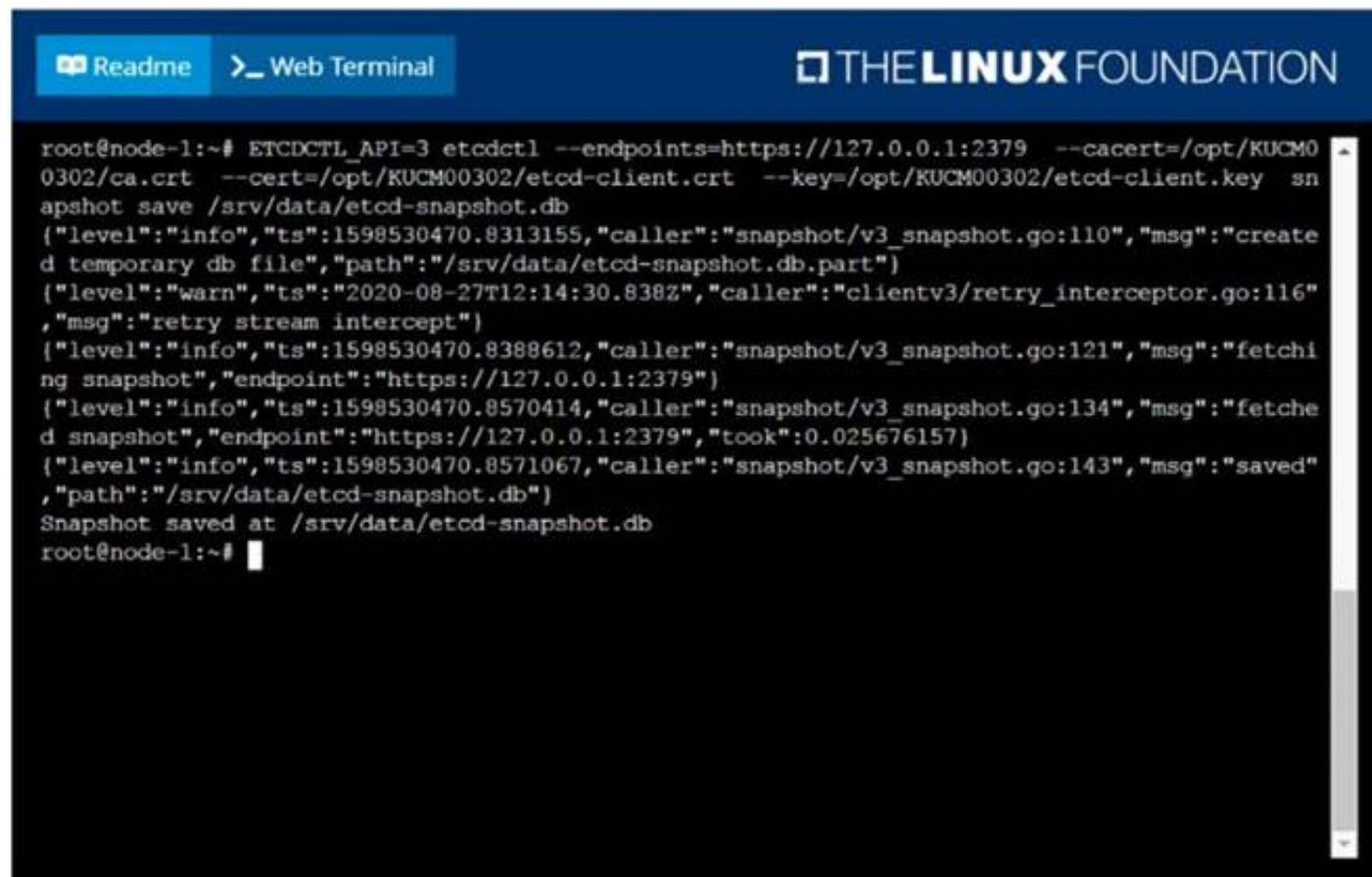≫ Client key:Topt/KUCM00302/etcd-client.key

A. Mastered
B. Not Mastered

Answer: A

Explanation:
solution
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NEW QUESTION 16
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 19
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 22
......

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