

## Exam Questions CKA

Certified Kubernetes Administrator (CKA) Program

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



**NEW QUESTION 1**

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 2**

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 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 ?Ci
```

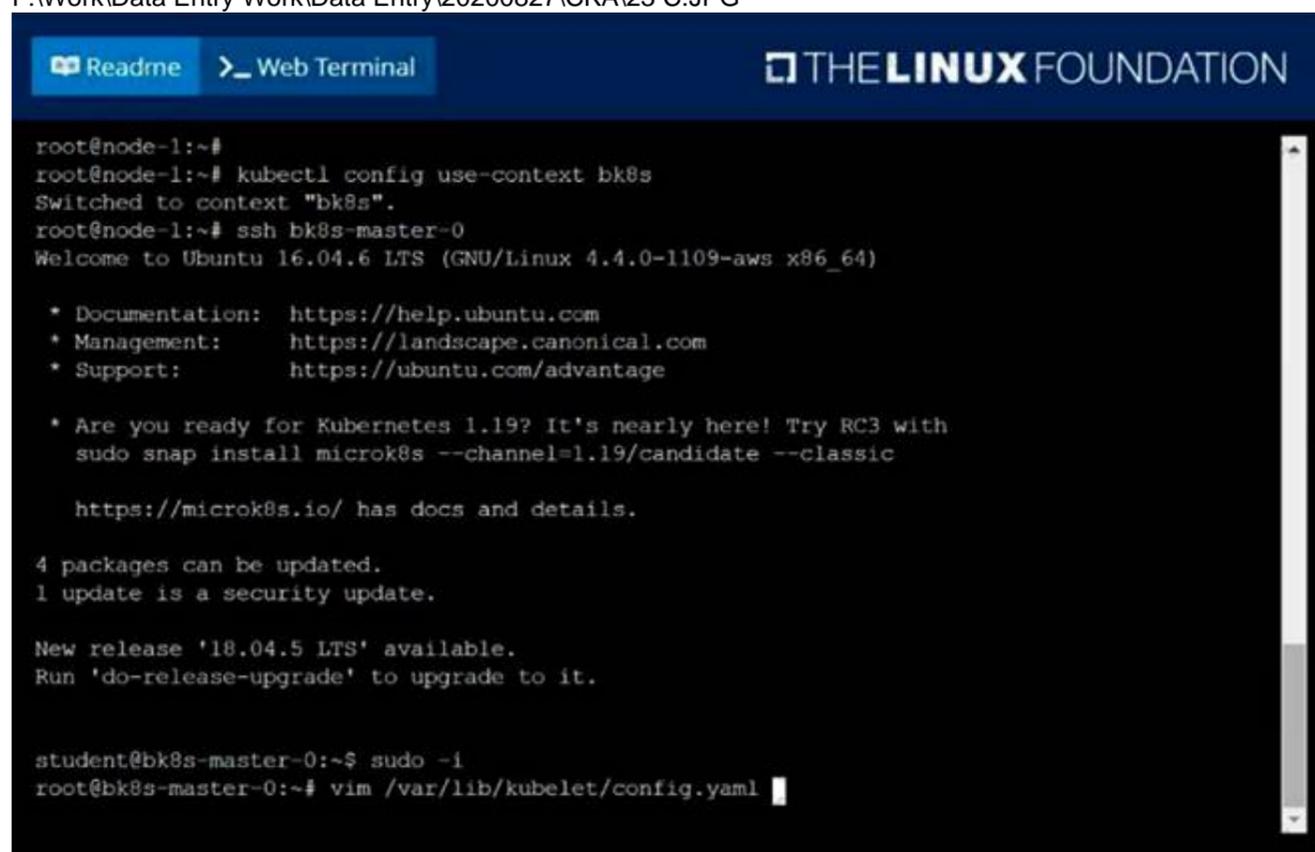
- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

solution

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The screenshot shows a terminal window with a dark background and light text. At the top, there are two tabs: 'Readme' and 'Web Terminal'. The terminal content is as follows:

```
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
:~#
    
```

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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 3**

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 4**

Create a pod namedkucc8with a single app container for each of the following images running inside(there may be between 1 and 4images specified): nginx + redis + memcached.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

solution  
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```

Readme Web Terminal THE LINUX FOUNDATION
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-t4791 1/1 Running 0 6h9m
root@node-1:~#

```

**NEW QUESTION 5**

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

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

kubectlrn nginx --image=nginx --restart=Never --port=80

**NEW QUESTION 6**

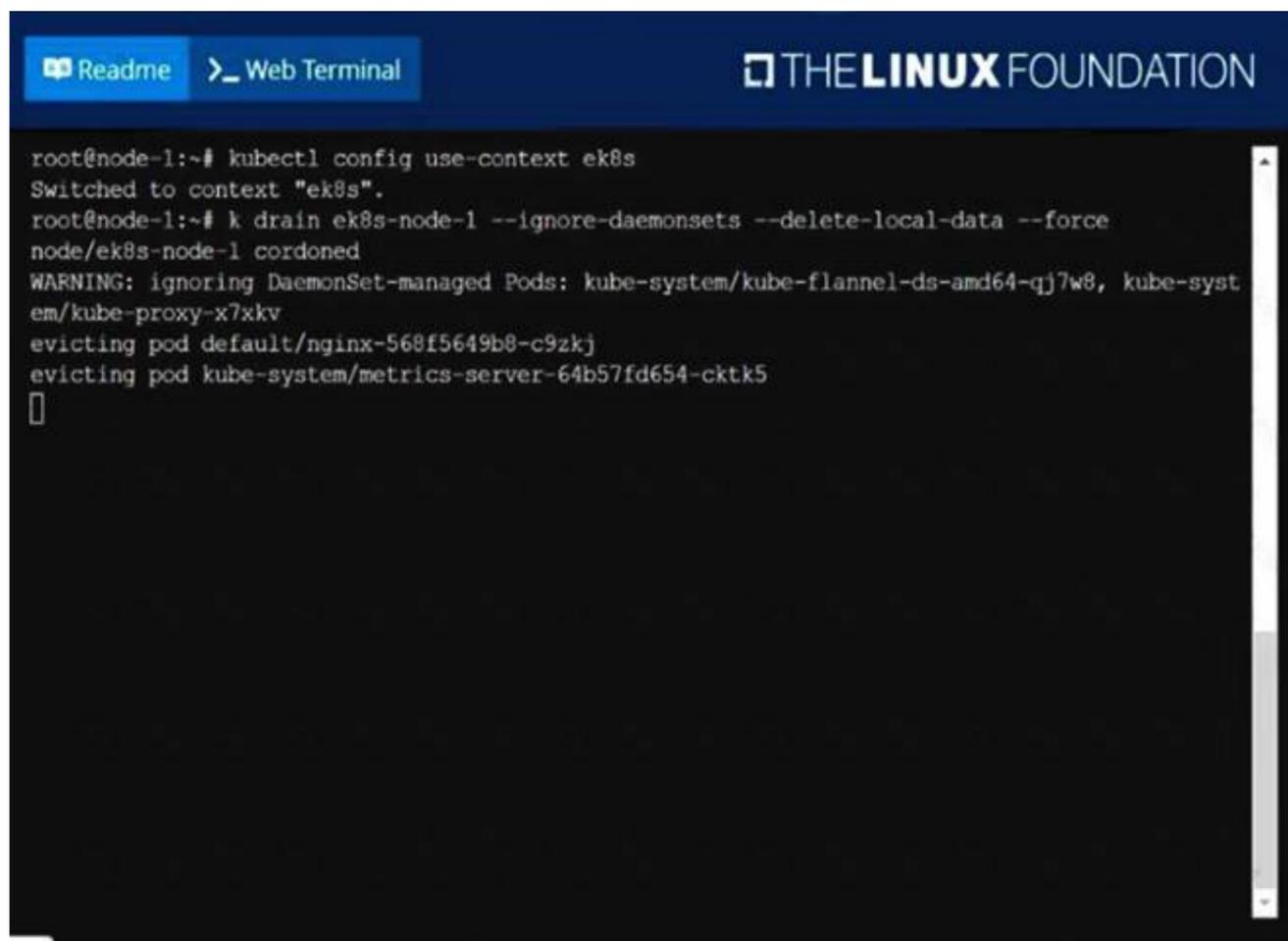
Set the node named ek8s-node-1as unavailable and reschedule all the pods running on it.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

solution  
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```
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-system/kube-proxy-x7xkv
evicting pod default/nginx-568f5649b8-c9zkj
evicting pod kube-system/metrics-server-64b57fd654-cktk5
[]
```

**NEW QUESTION 7**

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. Persistent Volumes 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 Persistent Volume provisioned in an easy way.

Creating Persistent Volume

```
kind: PersistentVolume
apiVersion: v1
metadata:
  name: app-data
spec:
  capacity: # defines the capacity of PV we are creating
  storage: 2Gi # the amount of storage we are trying 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 class name `shared`, `2Gi` of storage capacity and the host path `/srv/app-data`.

```
apiVersion: v1
kind: PersistentVolume
metadata:
  name: app-data
spec:
  capacity:
    storage: 2Gi
  accessModes:
    - ReadWriteMany
  hostPath:
    path: /srv/app-data
  storageClassName: share
```

"app-data.yaml" 12L, 194C

\* 2. Save the file and create the persistent volume. Image for post

```
njerry191@cloudshell:~ (extreme-clone-265411)$ kubectl create -f pv.yaml
persistentvolume/pv created
```

\* 3. View the persistent volume.

```
njerry191@cloudshell:~ (extreme-clone-265411)$ kubectl get pv
NAME          CAPACITY  ACCESS MODES  RECLAIM POLICY  STATUS    CLAIM  STORAGECLASS  REASON  AGE
app-data      2Gi      RWX           Retain          Available    
  app-data      2Gi      RWX           Retain          Available  shared      31s
```

> 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: PersistentVolumeClaim

apiVersion: v1

metadata: name: app-data

spec: accessModes: - ReadWriteMany

resources: requests: storage: 2Gi storageClassName: shared

\* 2. Save and create the pvc

```
njerry191@cloudshell:~ (extreme-clone-265411)$ kubectl create -f app-data.yaml persistentvolumeclaim/app-data created
```

\* 3. View the pvc Image for post

```
njerry191@cloudshell:~ (extreme-clone-265411)$ kubectl get pvc
NAME          STATUS  VOLUME  CAPACITY  ACCESS MODES  STORAGECLASS
pv            Bound   pv      512m     RWX           shared
```

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

Image for post

```
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
```

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: v1

kind: Pod

metadata: creationTimestamp: null name: app-data

spec: volumes: - name: config persistentVolumeClaim: claimName: app-data

containers: - image: nginx name: app volumeMounts: - mountPath: "/srv/app-data" name: config

**NEW QUESTION 8**

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 9**

Create a namespace called 'development' and a pod with image nginx called nginx on this namespace.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

kubectl create namespace development  
kubectl run nginx --image=nginx --restart=Never -n development

**NEW QUESTION 10**

Create a pod as follows:

- > Name:non-persistent-redis
- > container Image:redis
- > Volume with name:cache-control
- > Mount path:/data/redis

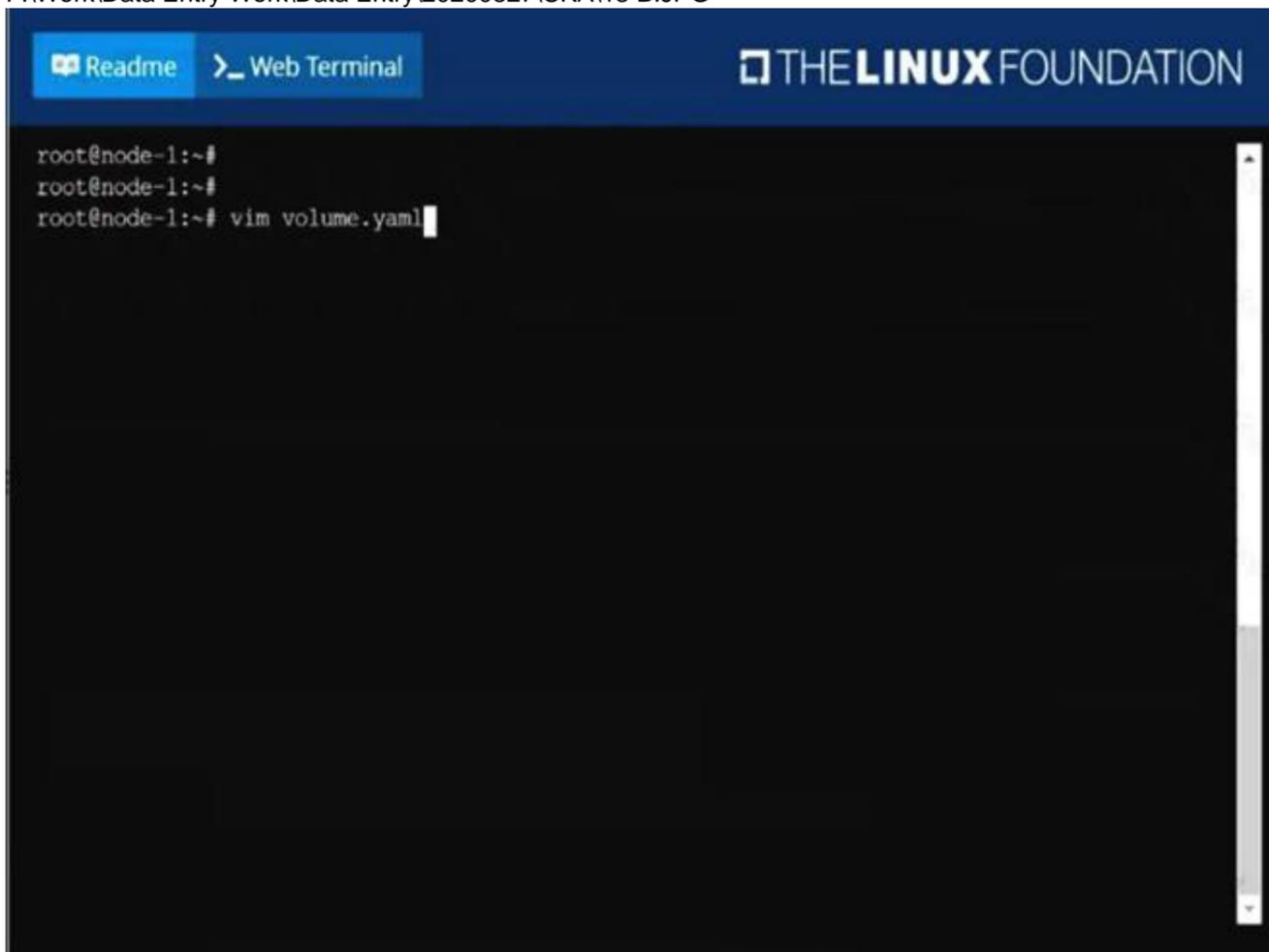
The pod should launch in the staging namespace and the volume must not be persistent.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

solution  
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B. Not Mastered

**Answer:** A

**Explanation:**

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

**NEW QUESTION 20**

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@wk8s-node-0] $ | sudo ?Ci
```

A. Mastered

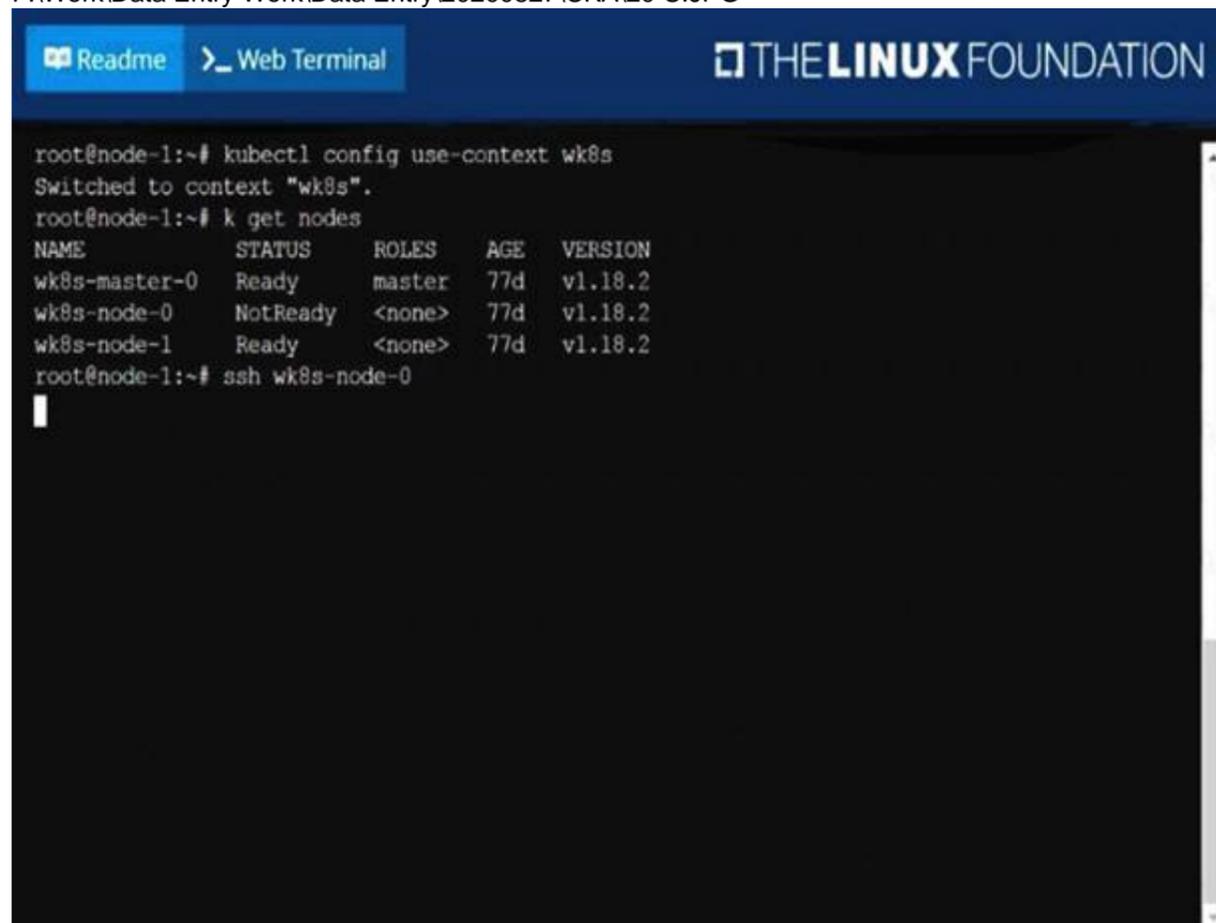
B. Not Mastered

**Answer:** A

**Explanation:**

solution

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```
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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```

Readme Web Terminal THE LINUX FOUNDATION

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
Created symlink from /etc/systemd/system/multi-user.target.wants/kubelet.service to /lib/systemd/system/kubelet.service.
root@wk8s-node-0:~# exit
logout
student@wk8s-node-0:~$ exit
logout
Connection to 10.250.5.34 closed.
root@node-1:~# k get nodes
NAME           STATUS    ROLES    AGE   VERSION
wk8s-master-0  Ready    master   77d   v1.18.2
wk8s-node-0    Ready    <none>   77d   v1.18.2
wk8s-node-1    Ready    <none>   77d   v1.18.2
root@node-1:~#

```

**NEW QUESTION 24**

Create a file:  
/opt/KUCC00302/kucc00302.txt that lists all pods that implement servicebazin namespace development.  
The format of the file should be one pod name per line.

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

solution  
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**NEW QUESTION 27**

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 30**

List all the pods sorted by created timestamp

- A. Mastered
- B. Not Mastered

**Answer:** A

**Explanation:**

```
kubectl get pods--sort-by=.metadata.creationTimestamp
```

**NEW QUESTION 33**

.....

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