

Linux-Foundation

Exam Questions CKA

Certified Kubernetes Administrator (CKA) Program



NEW QUESTION 1

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 2

CORRECT TEXT

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 3

CORRECT TEXT

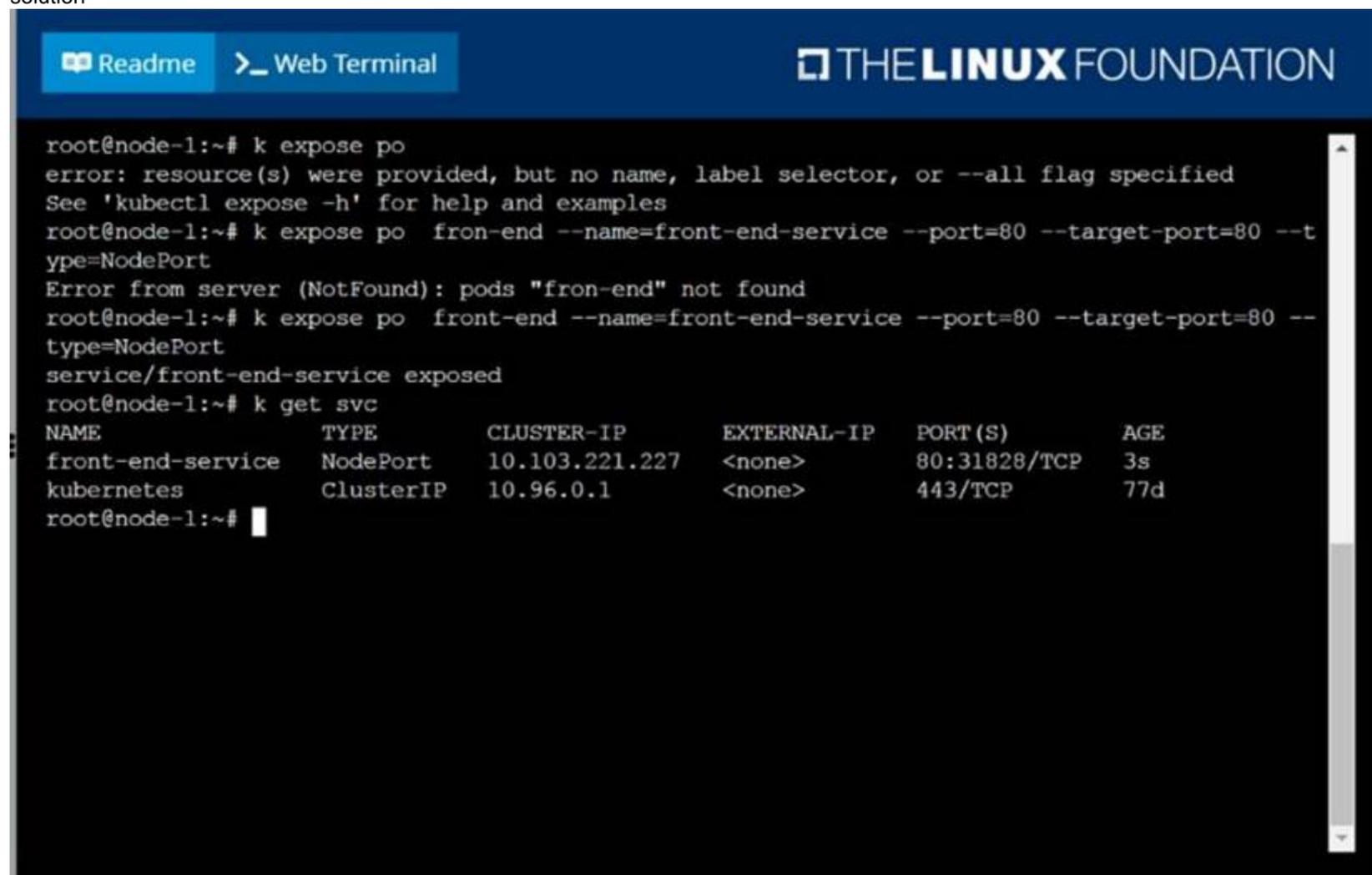
Create and configure the service front-end-service so it's accessible through NodePort and routes to the existing pod named front-end.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution



The screenshot shows a terminal window with the following content:

```

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

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NEW QUESTION 4

CORRECT TEXT

Get IP address of the pod – "nginx-dev"

- A. Mastered
- B. Not Mastered

Answer: A

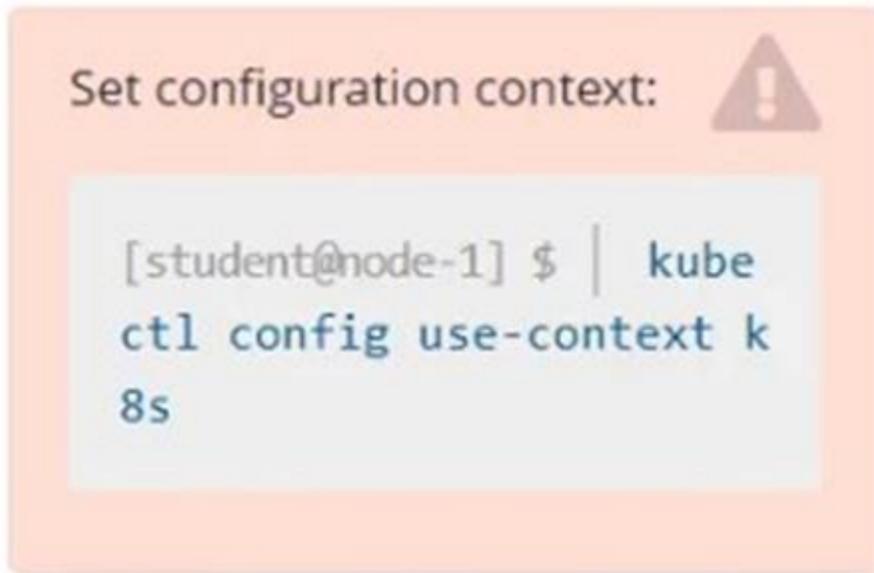
Explanation:

```
Kubect1 get po -o wide
Using JsonPath
kubect1 get pods -o=jsonpath='{range
items[*]}{.metadata.name}{"\t"}{.status.podIP}{"\n"}{end}'
```

NEW QUESTION 5

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
#
kubectl create -f node-select.yaml
```

NEW QUESTION 6

CORRECT TEXT

Create a deployment as follows:

- ? Name: nginx-random
 - ? Exposed via a service nginx-random
 - ? Ensure that the service & pod are accessible via their respective DNS records
 - ? The container(s) within any pod(s) running as a part of this deployment should use the nginx Image
- Next, use the utility nslookup to look up the DNS records of the service & pod and write the output to /opt/KUNW00601/service.dns and /opt/KUNW00601/pod.dns respectively.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

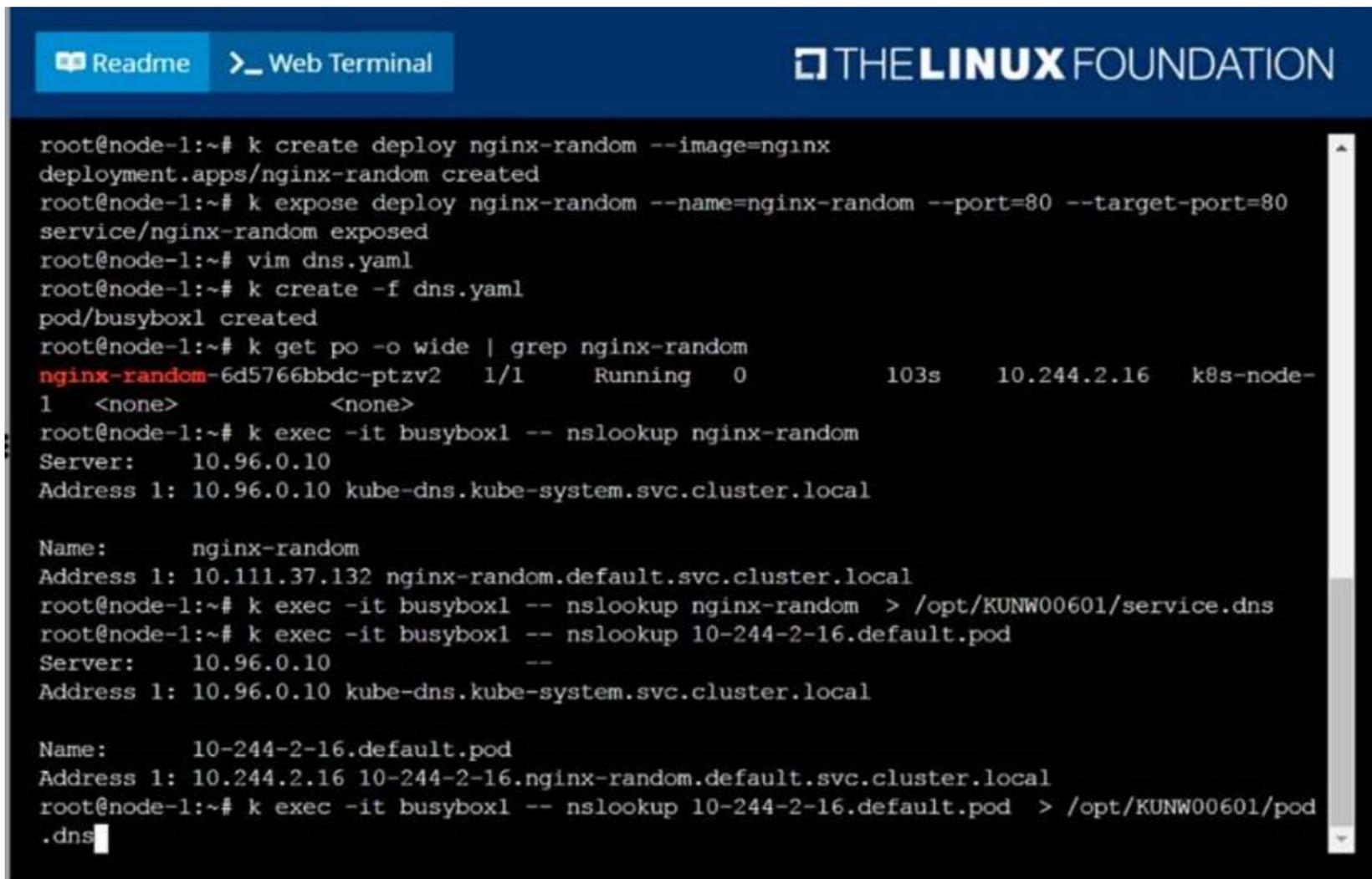
Solution:

```
Readme Web Terminal THE LINUX FOUNDATION
root@node-1:~#
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
```

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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
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

```

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NEW QUESTION 7

CORRECT TEXT

For this item, you will have to ssh to the nodes ik8s-master-0 and ik8s-node-0 and complete all tasks on these nodes. Ensure that you return to the base node (hostname: node-1) when you have completed this item.

Context

As an administrator of a small development team, you have been asked to set up a Kubernetes cluster to test the viability of a new application.

Task

You must use kubeadm to perform this task. Any kubeadm invocations will require the use of the --ignore-preflight-errors=all option.

? Configure the node ik8s-master-0 as a master node. .

? Join the node ik8s-node-0 to the cluster.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution

You must use the kubeadm configuration file located at /etc/kubeadm.conf when initializing your cluster.

You may use any CNI plugin to complete this task, but if you don't have your favourite CNI plugin's manifest URL at hand, Calico is one popular option:

<https://docs.projectcalico.org/v3.14/manifests/calico.yaml>

Docker is already installed on both nodes and apt has been configured so that you can install the required tools.

NEW QUESTION 8

CORRECT TEXT

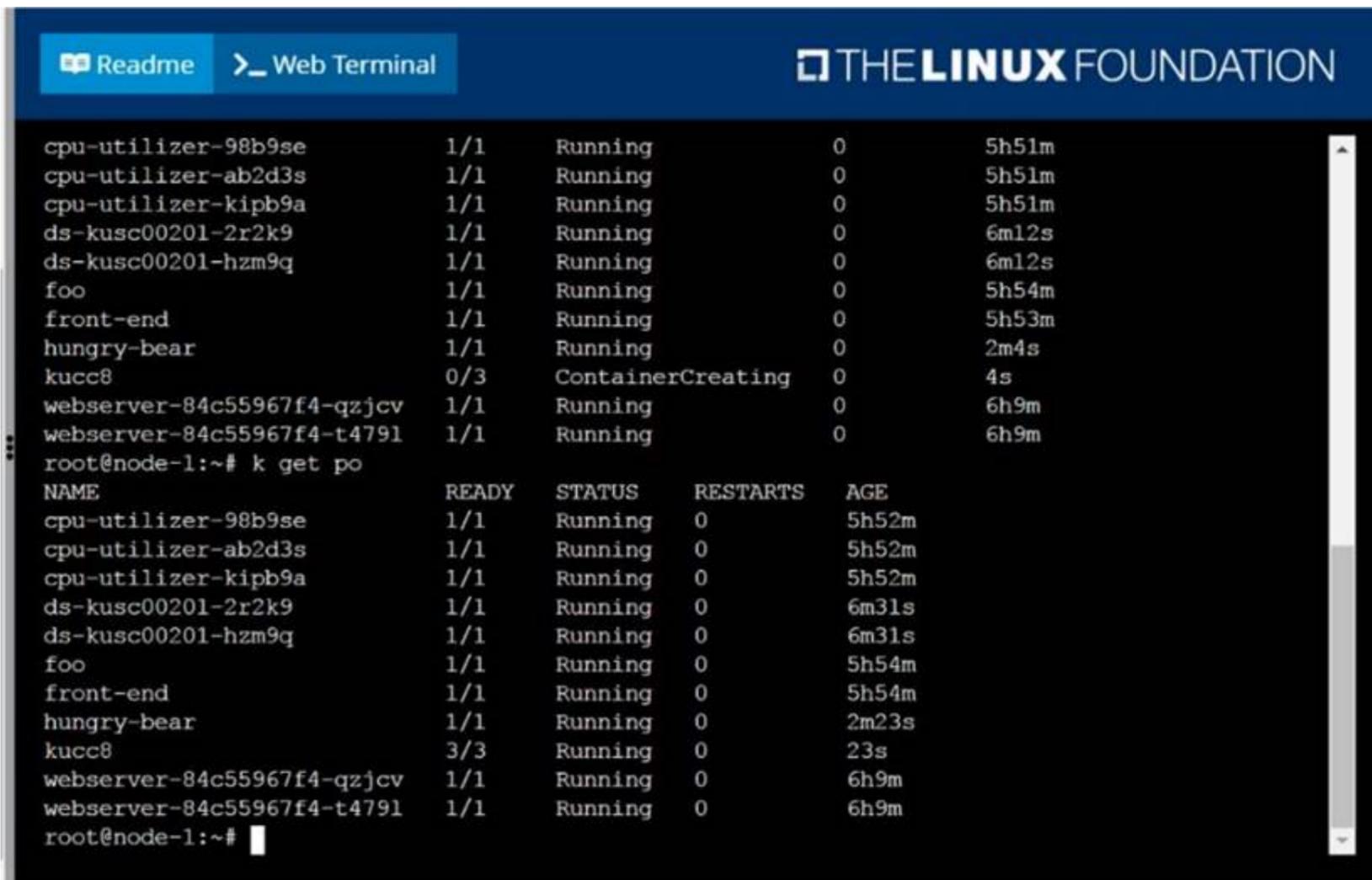
Create a pod named kucc8 with a single app container for each of the following images running inside (there may be between 1 and 4 images specified):
 nginx + redis + memcached.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

solution



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NEW QUESTION 9

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 10

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 10

CORRECT TEXT

Score: 4%



Task

Scale the deployment presentation to 6 pods.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:
 kubectl get deployment
 kubectl scale deployment.apps/presentation --replicas=6

NEW QUESTION 13

CORRECT TEXT

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

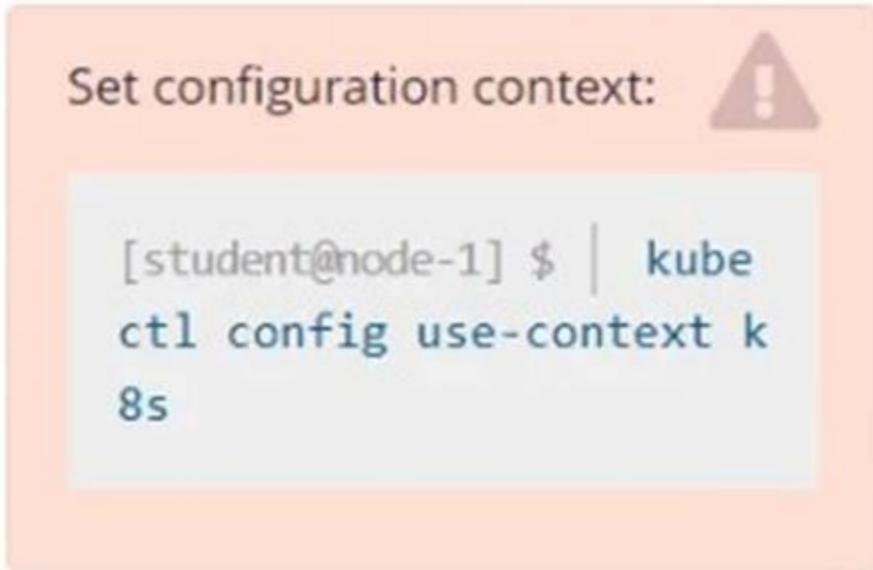
kubectl get pods -o=jsonpath="{.items[*]}['metadata.name']"

, 'metadata.namespace']]"

NEW QUESTION 15

CORRECT TEXT

Score: 4%



Task

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 .

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
kubectl run kucc8 --image=nginx --dry-run -o yaml > kucc8.yaml
```

```
# vi kucc8.yaml
```

```
apiVersion: v1
```

```
kind: Pod
```

```
metadata:
```

```
  creationTimestamp: null
```

```
  name: kucc8
```

```
spec:
```

```
  containers:
```

```
  - image: nginx
```

```
    name: nginx
```

```
  - image: redis
```

```
    name: redis
```

```
  - image: memcached
```

```
    name: memcached
```

```
  - image: consul
```

```
    name: consul
```

```
#
```

```
kubectl create -f kucc8.yaml
```

```
#12.07
```

NEW QUESTION 17

CORRECT TEXT

Task Weight: 4%



Task

Scale the deployment webserver to 3 pods.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
student@node-1:~$ kubectl scale deploy webserver --replicas=3
deployment.apps/webserver scaled
student@node-1:~$ kubectl scale deploy webserver --replicas=3
```

NEW QUESTION 20

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 21

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 22

CORRECT TEXT

Perform the following tasks:

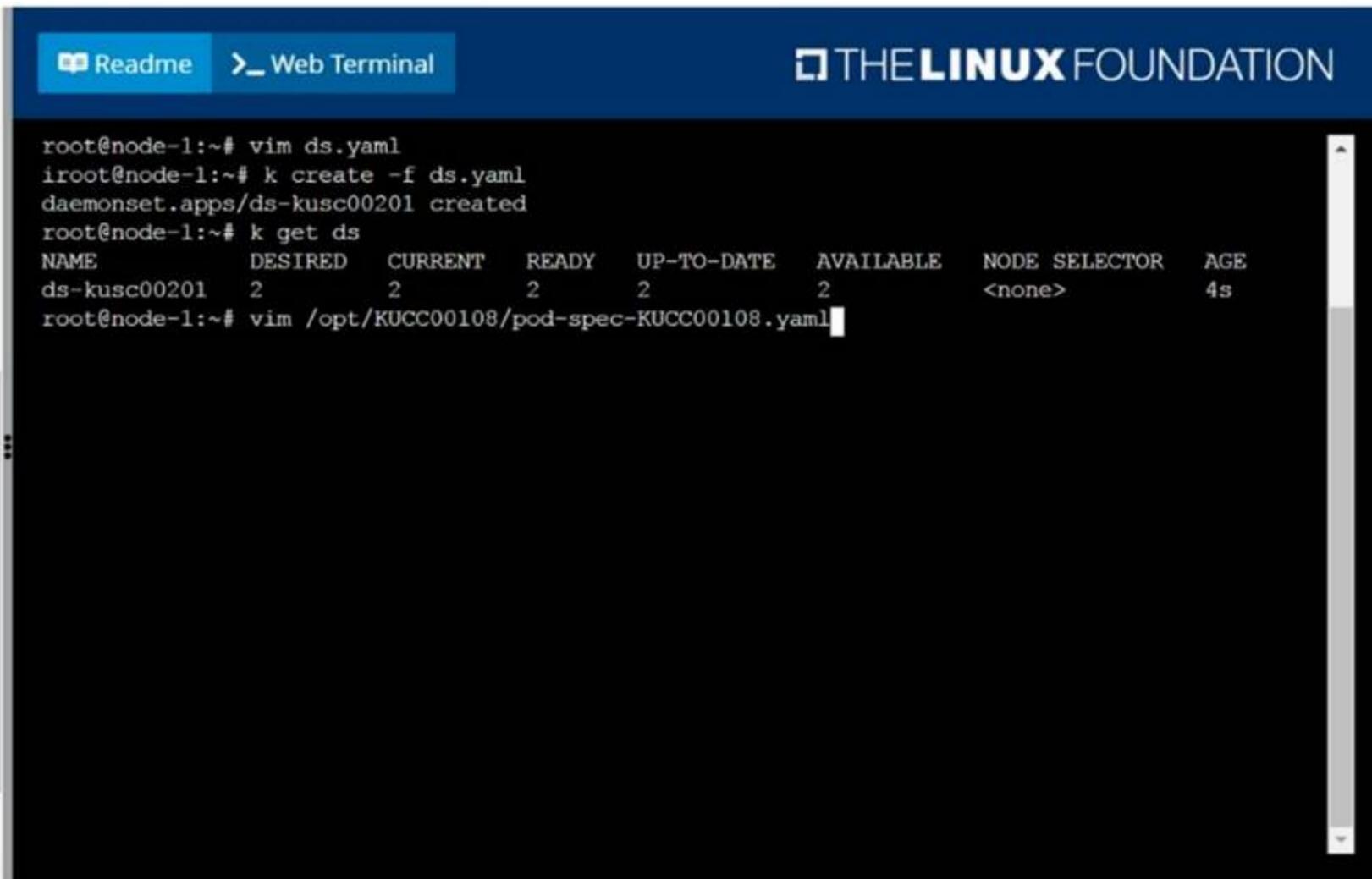
- ? Add an init container to hungry-bear (which has been defined in spec file /opt/KUCC00108/pod-spec-KUCC00108.yaml)
- ? The init container should create an empty file named /workdir/calm.txt
- ? If /workdir/calm.txt is not detected, the pod should exit
- ? Once the spec file has been updated with the init container definition, the pod should be created

A.

Answer: Seethesolutionbelow.

Explanation:

solution



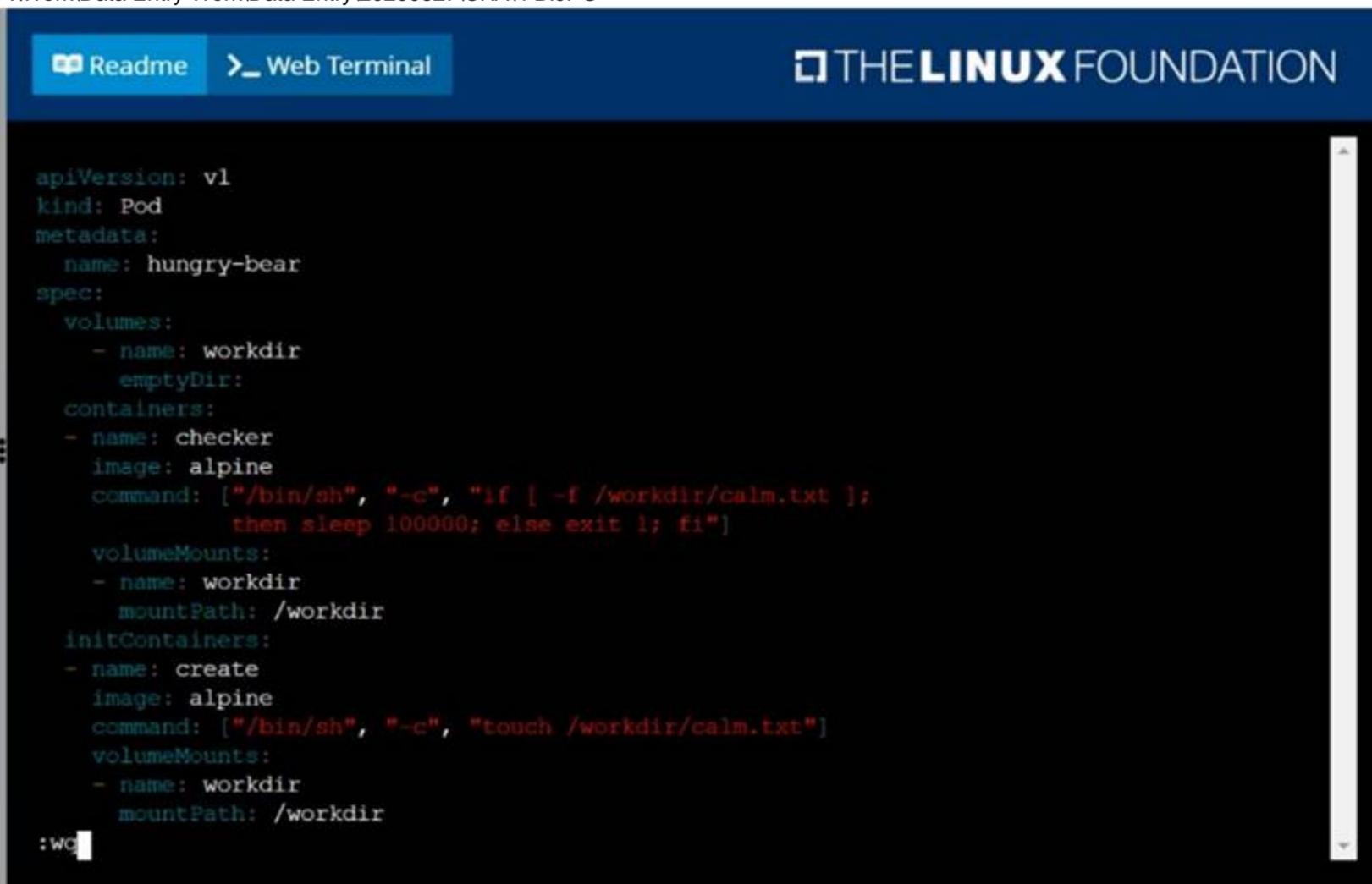
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```

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:~# vim /opt/KUCC00108/pod-spec-KUCC00108.yaml

```

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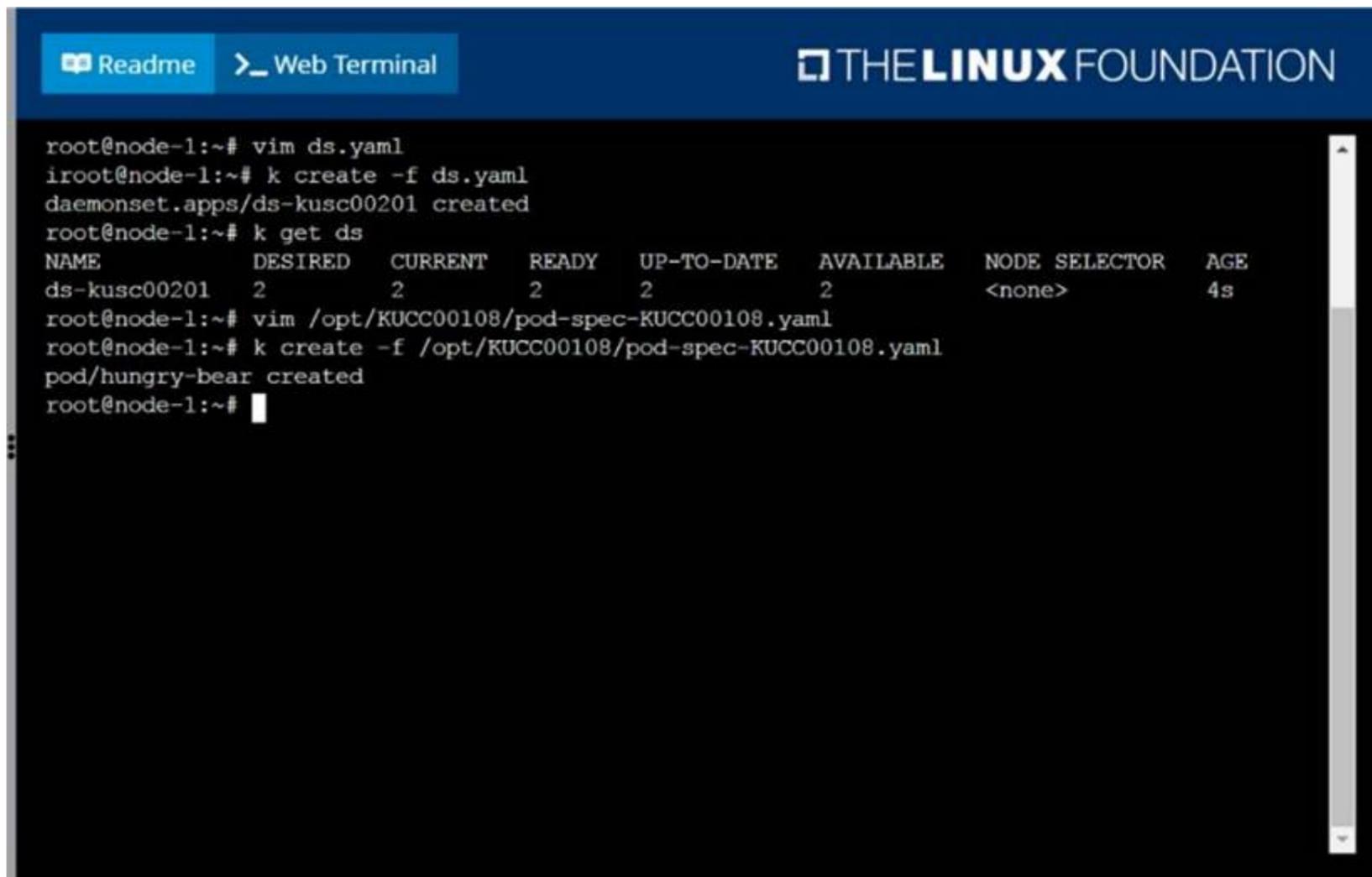
Readme Web Terminal THE LINUX FOUNDATION

```

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

```

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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:~# 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:~#

```

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NEW QUESTION 26

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

```

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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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```

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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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```

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/sy
temd/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:~#
```

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NEW QUESTION 27

CORRECT TEXT

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

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

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

NEW QUESTION 28

CORRECT TEXT

List all the pods sorted by name

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

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

NEW QUESTION 31

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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```

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:~#
```

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NEW QUESTION 36

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 41

CORRECT TEXT

Score: 5%



Task

Monitor the logs of pod bar and:

- Extract log lines corresponding to error file-not-found
- Write them to /opt/KUTR00101/bar

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
kubectl logs bar | grep 'unable-to-access-website' > /opt/KUTR00101/bar  
cat /opt/KUTR00101/bar
```

NEW QUESTION 45

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 49

.....

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