

Linux Foundation

CKAD Exam

Linux Foundation Certified Kubernetes Application Developer Exam

QUESTIONS & ANSWERS

DEMO VERSION

(LIMITED CONTENT)

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Version: 5.0

Question: 1

Exhibit:



Context

A web application requires a specific version of redis to be used as a cache.

Task

Create a pod with the following characteristics, and leave it running when complete:

- The pod must run in the web namespace.

The namespace has already been created

- The name of the pod should be cache
- Use the lfcncf/redis image with the 3.2 tag
- Expose port 6379

Solution

Solution:

A terminal window with a dark blue header bar containing "Readme" and "Web Terminal" buttons, and "THE LINUX FOUNDATION" logo. The terminal text shows the following commands and output:

```
student@node-1:~$ kubectl run cache --image=lfcncf/redis:3.2 --port=6379 -n web
pod/cache created
student@node-1:~$ kubectl get pods -n web
NAME    READY   STATUS             RESTARTS   AGE
cache   0/1     ContainerCreating   0           6s
student@node-1:~$ kubectl get pods -n web
NAME    READY   STATUS    RESTARTS   AGE
cache   1/1     Running   0           9s
student@node-1:~$
```

Question: 2

Exhibit:

Set configuration context:

```
[student@node-1] $ | kubectl config  
use-context k8s
```

Context

You are tasked to create a secret and consume the secret in a pod using environment variables as follow:

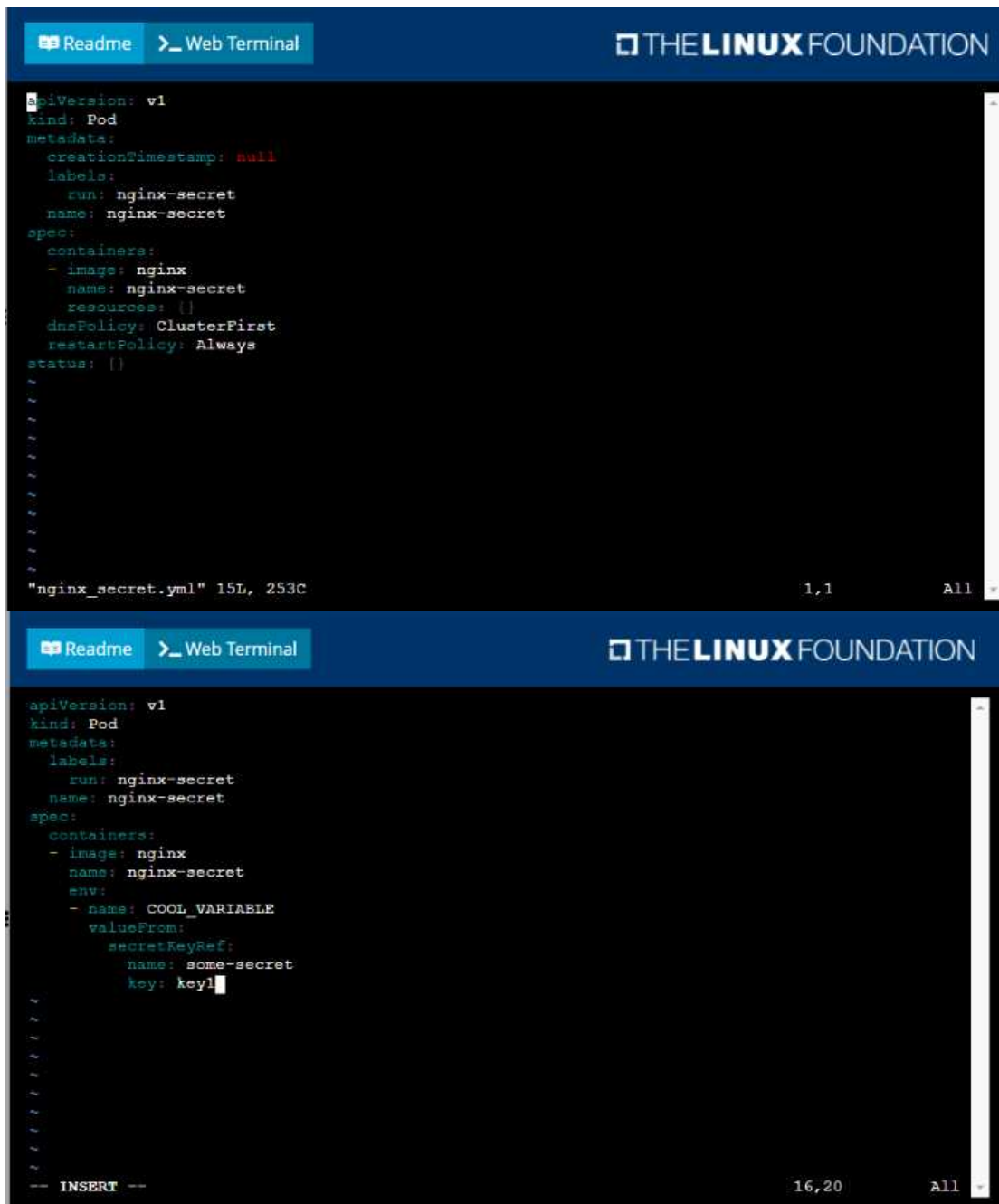
Task

- Create a secret named another-secret with a key/value pair; key1/value4
- Start an nginx pod named nginx-secret using container image nginx, and add an environment variable exposing the value of the secret key key 1, using COOL_VARIABLE as the name for the environment variable inside the pod

Solution

Solution:

```
student@node-1:~$ kubectl create secret generic some-secret --from-literal=key1=value4  
secret/some-secret created  
student@node-1:~$ kubectl get secret  
NAME                                TYPE                                DATA  AGE  
default-token-4kvr5                 kubernetes.io/service-account-token  3      2d11h  
some-secret                         Opaque                              1      5s  
student@node-1:~$ kubectl run nginx-secret --image=nginx --dry-run=client -o yaml > nginx_secret  
.yaml  
student@node-1:~$ vim nginx_secret.yaml
```



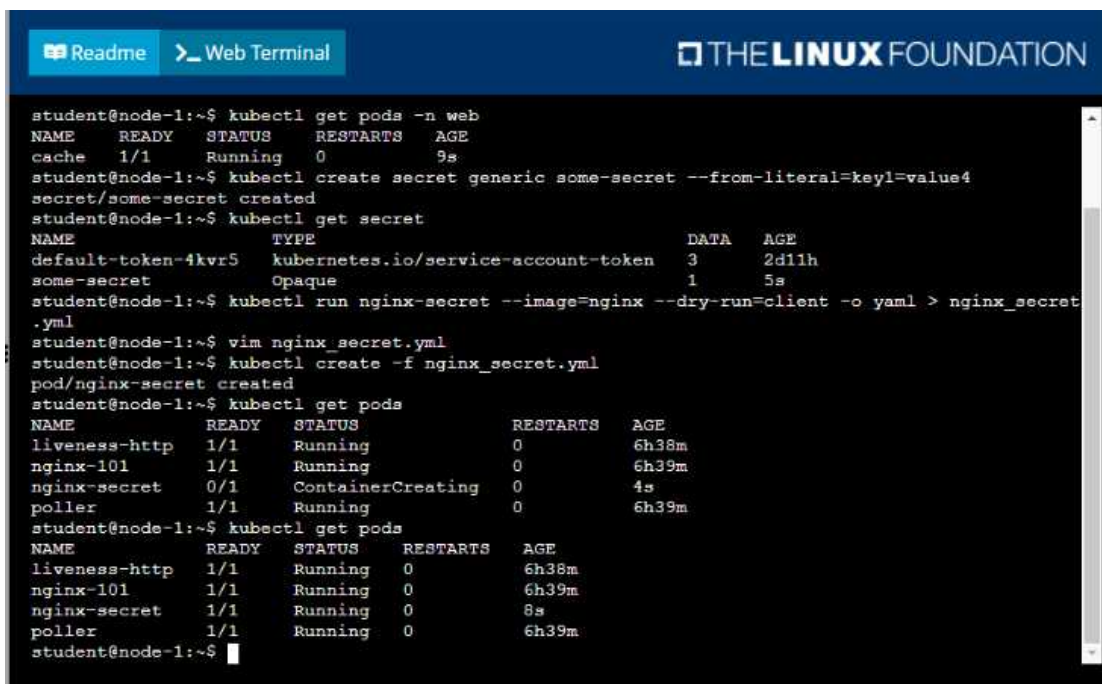
```
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: null
  labels:
    run: nginx-secret
    name: nginx-secret
spec:
  containers:
  - image: nginx
    name: nginx-secret
    resources: {}
  dnsPolicy: ClusterFirst
  restartPolicy: Always
status: {}

"nginx_secret.yml" 15L, 253C 1,1 All
```

```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: nginx-secret
    name: nginx-secret
spec:
  containers:
  - image: nginx
    name: nginx-secret
    env:
    - name: COOL_VARIABLE
      valueFrom:
        secretKeyRef:
          name: some-secret
          key: key1

-- INSERT --

16,20 All
```



```

student@node-1:~$ kubectl get pods -n web
NAME      READY   STATUS    RESTARTS   AGE
cache     1/1     Running   0           9s
student@node-1:~$ kubectl create secret generic some-secret --from-literal=key1=value4
secret/some-secret created
student@node-1:~$ kubectl get secret
NAME                TYPE          DATA   AGE
default-token-4kvr5  kubernetes.io/service-account-token  3       2d11h
some-secret          Opaque        1       5s
student@node-1:~$ kubectl run nginx-secret --image=nginx --dry-run=client -o yaml > nginx_secret.yaml
student@node-1:~$ vim nginx_secret.yaml
student@node-1:~$ kubectl create -f nginx_secret.yaml
pod/nginx-secret created
student@node-1:~$ kubectl get pods
NAME                READY   STATUS    RESTARTS   AGE
liveness-http       1/1     Running   0           6h38m
nginx-101            1/1     Running   0           6h39m
nginx-secret         0/1     ContainerCreating 0           4s
poller               1/1     Running   0           6h39m
student@node-1:~$ kubectl get pods
NAME                READY   STATUS    RESTARTS   AGE
liveness-http       1/1     Running   0           6h38m
nginx-101            1/1     Running   0           6h39m
nginx-secret         1/1     Running   0           8s
poller               1/1     Running   0           6h39m
student@node-1:~$

```

Question: 3

Exhibit:



Task

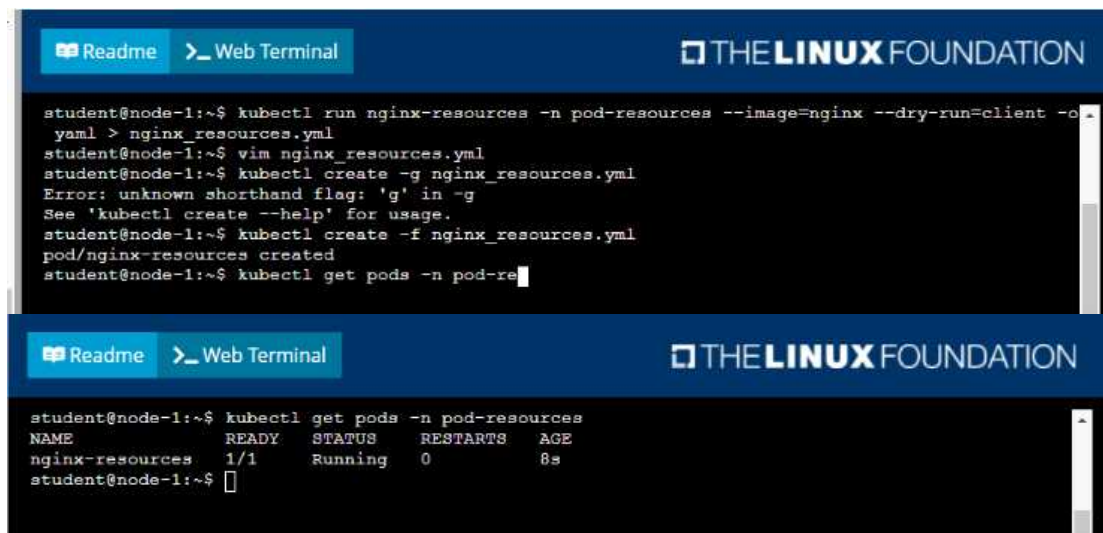
You are required to create a pod that requests a certain amount of CPU and memory, so it gets scheduled to a node that has those resources available.

- Create a pod named `nginx-resources` in the `pod-resources` namespace that requests a minimum of 200m CPU and 1Gi memory for its container
- The pod should use the `nginx` image
- The `pod-resources` namespace has already been created

Solution

Solution:

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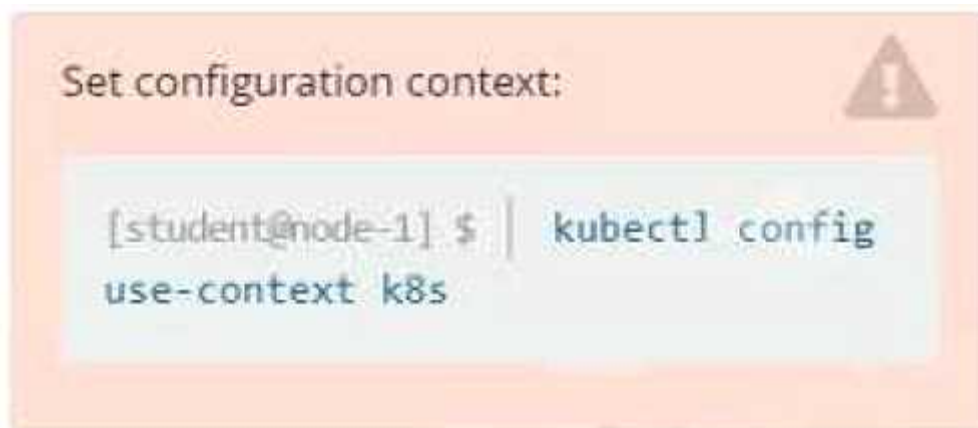


```
student@node-1:~$ kubect1 run nginx-resources -n pod-resources --image=nginx --dry-run=client -o
yaml > nginx_resources.yml
student@node-1:~$ vim nginx_resources.yml
student@node-1:~$ kubect1 create -g nginx_resources.yml
Error: unknown shorthand flag: 'g' in -g
See 'kubect1 create --help' for usage.
student@node-1:~$ kubect1 create -f nginx_resources.yml
pod/nginx-resources created
student@node-1:~$ kubect1 get pods -n pod-re
```

```
student@node-1:~$ kubect1 get pods -n pod-resources
NAME          READY   STATUS    RESTARTS   AGE
nginx-resources 1/1     Running   0           8s
student@node-1:~$
```

Question: 4

Exhibit:



Context

You are tasked to create a ConfigMap and consume the ConfigMap in a pod using a volume mount.

Task

Please complete the following:

- Create a ConfigMap named another-config containing the key/value pair: key4/value3
- start a pod named nginx-configmap containing a single container using the nginx image, and mount the key you just created into the pod under directory /also/a/path

Solution

Solution:


```

student@node-1:~$ kubectl create configmap another-config --from-literal=key4=value3
configmap/another-config created
student@node-1:~$ kubectl get configmap
NAME          DATA  AGE
another-config 1      5s
student@node-1:~$ kubectl run nginx-configmap --image=nginx --dry-run=client -o yaml > nginx_configmap.yml
student@node-1:~$ vim nginx_configmap.yml ^C
student@node-1:~$ mv nginx_configmap.yml nginx_configmap.yml
student@node-1:~$ vim nginx_co

```

Readme

Web Terminal

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```

apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: null
  labels:
    run: nginx-configmap
    name: nginx-configmap
spec:
  containers:
  - image: nginx
    name: nginx-configmap
    resources: {}
  dnsPolicy: ClusterFirst
  restartPolicy: Always
status: {}
~
~
~
~
~
~
~
~
~
~
"nginx_configmap.yml" 15L, 262C

```

1,1

All

Readme

Web Terminal

THE LINUX FOUNDATION

```

apiVersion: v1
kind: Pod
metadata:
  labels:
    run: nginx-configmap
    name: nginx-configmap
spec:
  containers:
  - image: nginx
    name: nginx-configmap
    volumeMounts:
    - name: myvol
      mountPath: /also/a/path
  volumes:
  - name: myvol
    configMap:
      name: another-config
~
~
~
~
~
~
~
~
~
~

```

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All


```

student@node-1:~$ kubectl create configmap another-config --from-literal=key4=value3
configmap/another-config created
student@node-1:~$ kubectl get configmap
NAME      DATA   AGE
another-config  1       5s
student@node-1:~$ kubectl run nginx-configmap --image=nginx --dry-run=client -o yaml > nginx_configmap.yaml
student@node-1:~$ vim nginx_configmap.yaml ^C
student@node-1:~$ mv nginx_configmap.yaml nginx_configmap.yaml
student@node-1:~$ vim nginx_configmap.yaml
student@node-1:~$
student@node-1:~$ kubectl run nginx-configmap --image=nginx --dry-run=client -o yaml > nginx_configmap.yaml
student@node-1:~$ vim nginx_configmap.yaml ^C
student@node-1:~$ mv nginx_configmap.yaml nginx_configmap.yaml
student@node-1:~$ vim nginx_configmap.yaml
student@node-1:~$ kubectl create f nginx_configmap.yaml
Error: must specify one of -f and -k

error: unknown command "f nginx_configmap.yaml"
See 'kubectl create -h' for help and examples
student@node-1:~$ kubectl create -f nginx_configmap.yaml
error: error validating "nginx_configmap.yaml": error validating data: ValidationError(Pod.spec.containers[1]): unknown field "mountPath" in io.k8s.api.core.v1.Container; if you choose to ignore these errors, turn validation off with --validate=false
student@node-1:~$ vim nginx_configmap.yaml

```

[Readme](#) [Web Terminal](#)

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```

student@node-1:~$ kubectl create f nginx_configmap.yaml
Error: must specify one of -f and -k

error: unknown command "f nginx_configmap.yaml"
See 'kubectl create -h' for help and examples
student@node-1:~$ kubectl create -f nginx_configmap.yaml
error: error validating "nginx_configmap.yaml": error validating data: ValidationError(Pod.spec.containers[1]): unknown field "mountPath" in io.k8s.api.core.v1.Container; if you choose to ignore these errors, turn validation off with --validate=false
student@node-1:~$ vim nginx_configmap.yaml
student@node-1:~$ kubectl create -f nginx_configmap.yaml
pod/nginx-configmap created
student@node-1:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
liveness-http 1/1     Running   0           6h44m
nginx-101     1/1     Running   0           6h45m
nginx-configmap 0/1     ContainerCreating 0           5s
nginx-secret   1/1     Running   0           5m39s
poller        1/1     Running   0           6h44m
student@node-1:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
liveness-http 1/1     Running   0           6h44m
nginx-101     1/1     Running   0           6h45m
nginx-configmap 1/1     Running   0           8s
nginx-secret   1/1     Running   0           5m42s
poller        1/1     Running   0           6h45m
student@node-1:~$

```

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