

Linux-Foundation

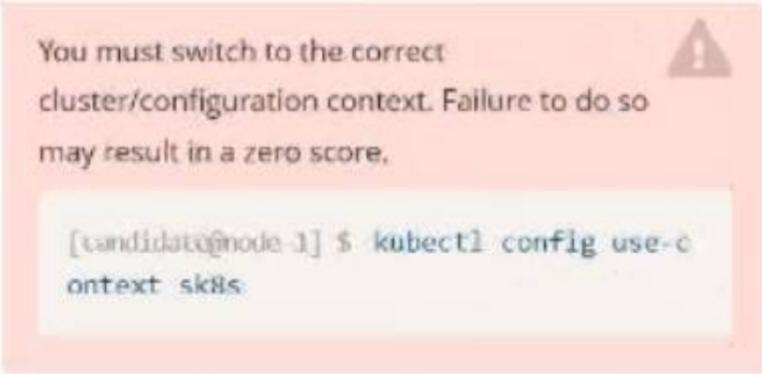
Exam Questions CKAD

Certified Kubernetes Application Developer (CKAD) Program



NEW QUESTION 1

Exhibit:

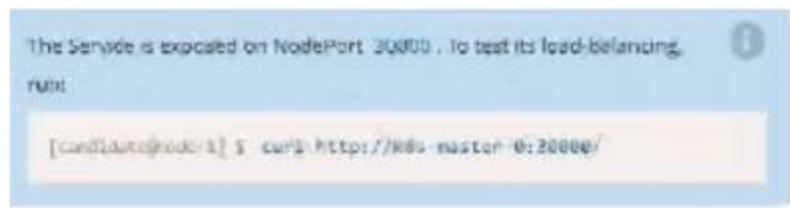
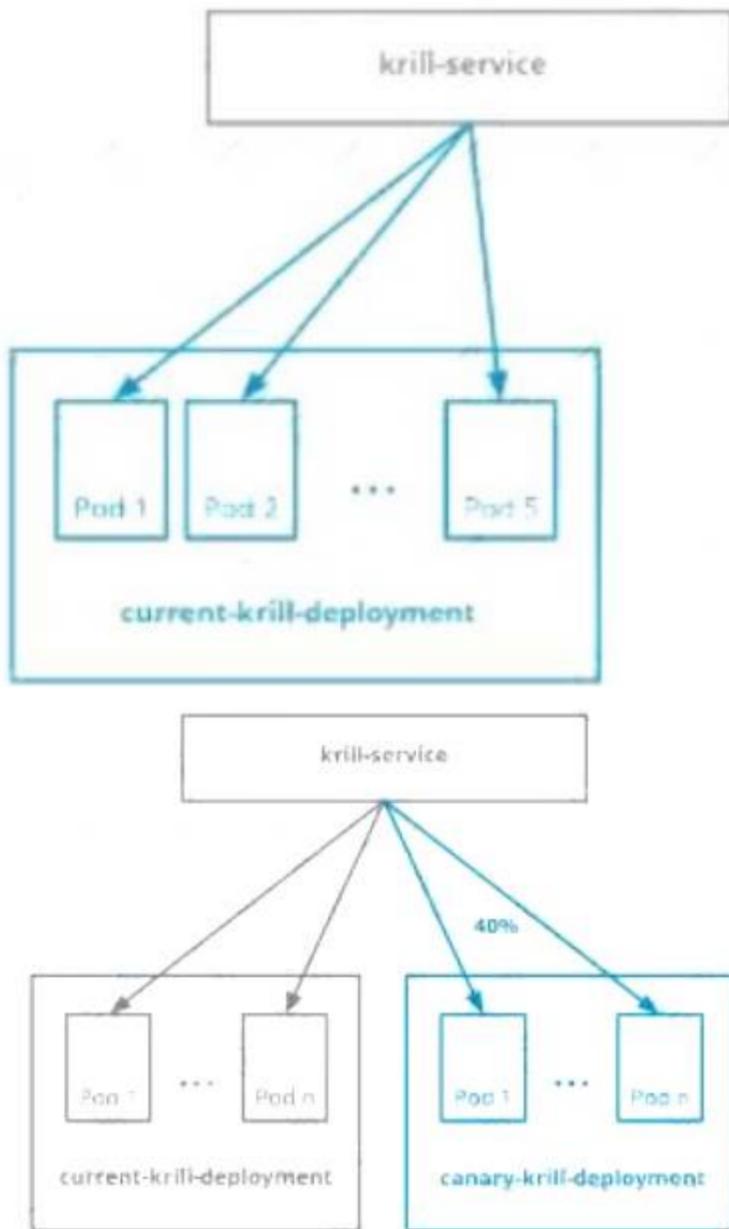


Context

You are asked to prepare a Canary deployment for testing a new application release.

Task:

A Service named krill-Service in the goshawk namespace points to 5 pod created by the Deployment named current-krill-deployment



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
candidate@node-1:~/humane-stork$ kubectl scale deploy canary-krill-deployment --replicas 4 -n goshawk
deployment.apps/canary-krill-deployment scaled
candidate@node-1:~/humane-stork$ kubectl get deploy -n goshawk
NAME                    READY   UP-TO-DATE   AVAILABLE   AGE
canary-krill-deployment 4/4     4            4           46s
current-krill-deployment 5/5     5            5           7h22m
candidate@node-1:~/humane-stork$ wget https://k8s.io/examples/
```

Text Description automatically generated

```

File Edit View Terminal Tabs Help
candidate@node-1:~/humane-storks$ wget https://k8s.io/examples/admin/resource/quota-pod.yaml
--2022-09-24 11:43:51-- https://k8s.io/examples/admin/resource/quota-pod.yaml
Resolving k8s.io (k8s.io)... 34.107.204.206, 2600:1901:0:26f3::
Connecting to k8s.io (k8s.io)[34.107.204.206]:443... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://kubernetes.io/examples/admin/resource/quota-pod.yaml [following]
--2022-09-24 11:43:52-- https://kubernetes.io/examples/admin/resource/quota-pod.yaml
Resolving kubernetes.io (kubernetes.io)... 147.75.40.148
Connecting to kubernetes.io (kubernetes.io)[147.75.40.148]:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 90 [application/x-yaml]
Saving to: 'quota-pod.yaml'

quota-pod.yaml      100%[=====>]          90  --.-KB/s   in 0s

2022-09-24 11:43:52 (15.0 MB/s) - 'quota-pod.yaml' saved [90/90]

candidate@node-1:~/humane-storks$ vim quota-pod.yaml

```

```

File Edit View Terminal Tabs Help

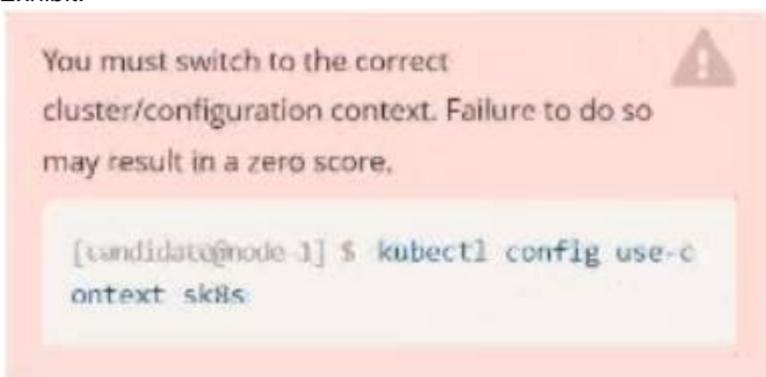
2022-09-24 11:43:52 (15.0 MB/s) - 'quota-pod.yaml' saved [90/90]

candidate@node-1:~/humane-storks$ vim quota-pod.yaml
candidate@node-1:~/humane-storks$ kubectl create -f quota-pod.yaml
resourcequota/pod-demo created
candidate@node-1:~/humane-storks$ kubectl get quota -n go
No resources found in go namespace.
candidate@node-1:~/humane-storks$ kubectl get quota -n goshawk
NAME      AGE      REQUEST    LIMIT
pod-demo  19s     pods: 9/10
candidate@node-1:~/humane-storks$ curl http://k8s-master-0:30000/
current-krill-deployment-fb7c7995c-kvtjr
app.kubernetes.io/name="current"
app.kubernetes.io/part-of="krill"
pod-template-hash="fb7c7995c"candidate@node-1:~/humane-storks$ curl http://k8s-master-0:30000/
current-krill-deployment-fb7c7995c-4whfm
app.kubernetes.io/name="current"
app.kubernetes.io/part-of="krill"
pod-template-hash="fb7c7995c"candidate@node-1:~/humane-storks$ curl http://k8s-master-0:30000/
canary-krill-deployment-5f78fd4786-dfk7l
app.kubernetes.io/name="canary"
app.kubernetes.io/part-of="krill"
pod-template-hash="5f78fd4786"candidate@node-1:~/humane-storks$ curl http://k8s-master-0:30000/
canary-krill-deployment-5f78fd4786-z5zrt
app.kubernetes.io/name="canary"
app.kubernetes.io/part-of="krill"
pod-template-hash="5f78fd4786"candidate@node-1:~/humane-storks$ curl http://k8s-master-0:30000/
canary-krill-deployment-5f78fd4786-2774b
app.kubernetes.io/name="canary"
app.kubernetes.io/part-of="krill"
pod-template-hash="5f78fd4786"candidate@node-1:~/humane-storks$

```

NEW QUESTION 2

Exhibit:



Task:
 Key3: value1
 Add an environment variable named BEST_VARIABLE consuming the value of the secret key3.

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```

candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl create secret generic app-secret -n default --from-literal=key3=value1
secret/app-secret created
candidate@node-1:~$ kubectl get secrets
NAME      TYPE      DATA   AGE
app-secret  Opaque    1       4s
candidate@node-1:~$ kubectl run nginx-secret -n default --image=nginx:stable --dry-run=client -o yaml > sec.yaml
candidate@node-1:~$ vim sec.yaml

```

Text Description automatically generated

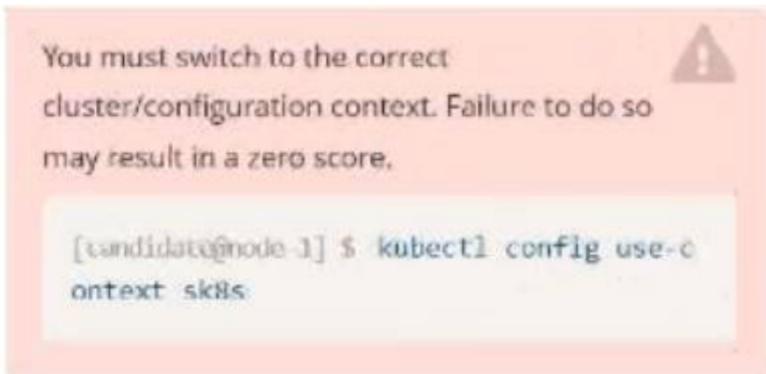
```
File Edit View Terminal Tabs Help
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: null
  labels:
    run: nginx-secret
    name: nginx-secret
    namespace: default
spec:
  containers:
  - image: nginx:stable
    name: nginx-secret
    env:
    - name: BEST_VARIABLE
      valueFrom:
        secretKeyRef:
          name: app-secret
          key: key3
```

Text Description automatically generated

```
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl create secret generic app-secret -n default --from-literal=key3=value1
secret/app-secret created
candidate@node-1:~$ kubectl get secrets
NAME          TYPE          DATA   AGE
app-secret    Opaque        1       4s
candidate@node-1:~$ kubectl run nginx-secret -n default --image=nginx:stable --dry-run=client -o yaml > sec.yaml
candidate@node-1:~$ vim sec.yaml
candidate@node-1:~$ kubectl create -f sec.yaml
pod/nginx-secret created
candidate@node-1:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-secret  1/1     Running   0           7s
candidate@node-1:~$
```

NEW QUESTION 3

Exhibit:



Task:

Create a Deployment named expose in the existing ckad00014 namespace running 6 replicas of a Pod. Specify a single container using the ifccncf/nginx: 1.13.7 image
 Add an environment variable named NGINX_PORT with the value 8001 to the container then expose port 8001

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl create deploy expose -n ckad00014 --image lfccncf/nginx:1.13.7 --dry-run=client -o yaml > dep.yaml
candidate@node-1:~$
```

Text Description automatically generated

```
File Edit View Terminal Tabs Help
apiVersion: apps/v1
kind: Deployment
metadata:
  creationTimestamp: null
  labels:
    app: expose
  name: expose
  namespace: ckad00014
spec:
  replicas: 6
  selector:
    matchLabels:
      app: expose
  strategy: {}
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: expose
    spec:
      containers:
      - image: lfccncf/nginx:1.13.7
        name: nginx
        ports:
        - containerPort: 8001
        env:
        - name: NGINX_PORT
          value: "8001"
```

Text Description automatically generated

```
File Edit View Terminal Tabs Help
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl create deploy expose -n ckad00014 --image lfccncf/nginx:1.13.7 --dry-run=client -o yaml > dep.yaml
candidate@node-1:~$
candidate@node-1:~$ vim dep.yaml
candidate@node-1:~$ kubectl create -f dep.yaml
deployment.apps/expose created
candidate@node-1:~$ kubectl get pods -n ckad00014
NAME READY STATUS RESTARTS AGE
expose-85dd99d4d9-25675 0/1 ContainerCreating 0 6s
expose-85dd99d4d9-4fhcc 0/1 ContainerCreating 0 6s
expose-85dd99d4d9-fl7j 0/1 ContainerCreating 0 6s
expose-85dd99d4d9-tt6rm 0/1 ContainerCreating 0 6s
expose-85dd99d4d9-vjd8b 0/1 ContainerCreating 0 6s
expose-85dd99d4d9-vtzpq 0/1 ContainerCreating 0 6s
candidate@node-1:~$ kubectl get deploy -n ckad00014
NAME READY UP-TO-DATE AVAILABLE AGE
expose 6/6 6 6 15s
candidate@node-1:~$
```

NEW QUESTION 4

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:

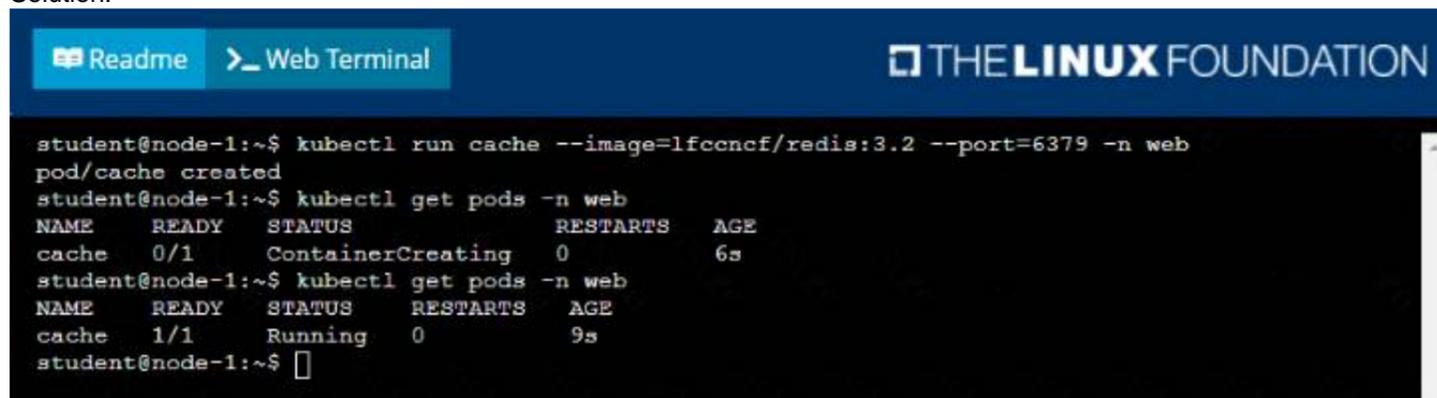
- The pod must run in the web namespace. The namespace has already been created
- The name of the pod should be cache
- Use the lfcncf/redis image with the 3.2 tag
- Expose port 6379

- A. Mastered
- B. Not Mastered

Answer: A

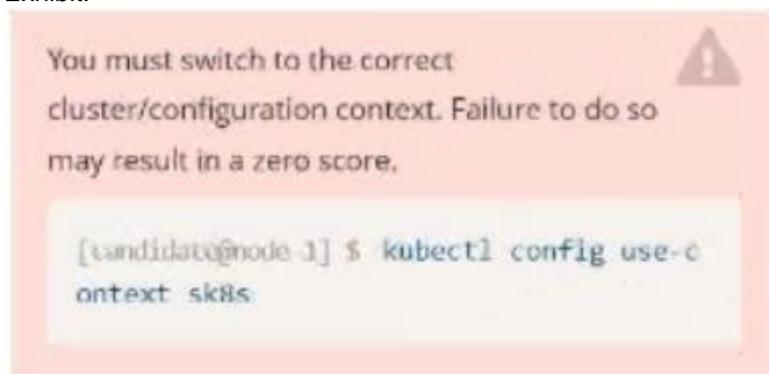
Explanation:

Solution:



NEW QUESTION 5

Exhibit:



Task:

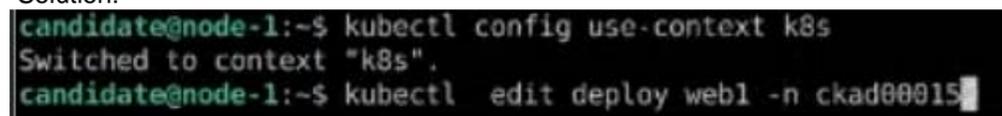
- 1- Update the Propertunel scaling configuration of the Deployment web1 in the ckad00015 namespace setting maxSurge to 2 and maxUnavailable to 59
- 2- Update the web1 Deployment to use version tag 1.13.7 for the lfcncf/nginx container image.
- 3- Perform a rollback of the web1 Deployment to its previous version

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:



Text Description automatically generated

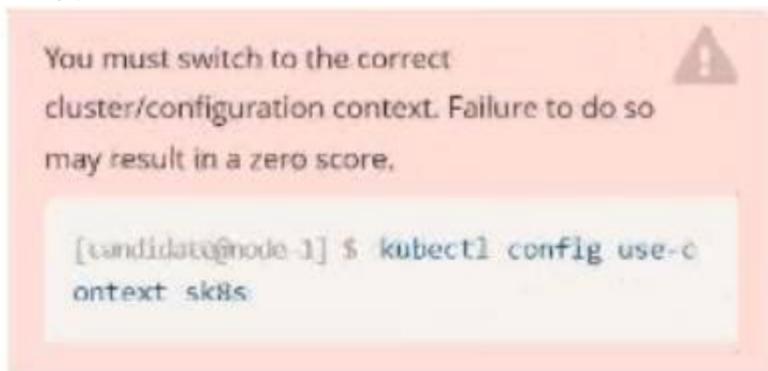
```
File Edit View Terminal Tabs Help
app: nginx
strategy:
  rollingUpdate:
    maxSurge: 2%
    maxUnavailable: 5%
  type: RollingUpdate
template:
  metadata:
    creationTimestamp: null
    labels:
      app: nginx
  spec:
    containers:
    - image: lfccncf/nginx:1.13.7
      imagePullPolicy: IfNotPresent
      name: nginx
      ports:
      - containerPort: 80
        protocol: TCP
      resources: {}
      terminationMessagePath: /dev/termination-log
      terminationMessagePolicy: File
    dnsPolicy: ClusterFirst
    restartPolicy: Always
    schedulerName: default-scheduler
    securityContext: {}
    terminationGracePeriodSeconds: 30
status:
  availableReplicas: 2
  conditions:
  - lastTransitionTime: "2022-09-24T04:26:41Z"
```

```
File Edit View Terminal Tabs Help
switched to context "k8s".
candidate@node-1:~$ kubectl create secret generic app-secret -n default --from-literal=key3=value1
secret/app-secret created
candidate@node-1:~$ kubectl get secrets
NAME          TYPE          DATA   AGE
app-secret    Opaque        1       4s
candidate@node-1:~$ kubectl run nginx-secret -n default --image=nginx:stable --dry-run=client -o yaml > sec.yaml
candidate@node-1:~$ vim sec.yaml
candidate@node-1:~$ kubectl create -f sec.yaml
pod/nginx-secret created
candidate@node-1:~$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
nginx-secret  1/1     Running   0           7s
candidate@node-1:~$ kubectl config use-context k8s
switched to context "k8s".
candidate@node-1:~$ kubectl edit deploy web1 -n ckad00015
deployment.apps/web1 edited
candidate@node-1:~$ kubectl rollout status deploy web1 -n ckad00015
deployment "web1" successfully rolled out
candidate@node-1:~$ kubectl rollout undo deploy web1 -n ckad00015
deployment.apps/web1 rolled back
candidate@node-1:~$ kubectl rollout history deploy web1 -n ckad00015
deployment.apps/web1
REVISION  CHANGE-CAUSE
2         <none>
3         <none>

candidate@node-1:~$ kubectl get rs -n ckad00015
NAME          DESIRED   CURRENT   READY   AGE
web1-56f98bcb79  0         0         0       63s
web1-85775b6b79  2         2         2       6h53m
candidate@node-1:~$
```

NEW QUESTION 6

Exhibit:



Task:

- > To run 2 replicas of the pod
- > Add the following label on the pod:
Role userUI

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

Text Description automatically generated

```
File Edit View Terminal Tabs Help
# reopened with the relevant failures.
#
apiVersion: apps/v1
kind: Deployment
metadata:
  annotations:
    deployment.kubernetes.io/revision: "1"
  creationTimestamp: "2022-09-24T04:27:03Z"
  generation: 1
  labels:
    app: nginx
  name: ckad00017-deployment
  namespace: ckad00017
  resourceVersion: "3349"
  uid: lcd67613-fade-46e9-b741-94298b9c6e7c
spec:
  progressDeadlineSeconds: 600
  replicas: 2
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 25%
      maxUnavailable: 25%
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
-- INSERT --
33,14 5%
```

Text Description automatically generated

```
File Edit View Terminal Tabs Help
name: ckad00017-deployment
namespace: ckad00017
resourceVersion: "3349"
uid: lcd67613-fade-46e9-b741-94298b9c6e7c
spec:
  progressDeadlineSeconds: 600
  replicas: 2
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 25%
      maxUnavailable: 25%
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: nginx
        role: userUI
    spec:
      containers:
        - image: nginx:latest
          imagePullPolicy: Always
          name: nginx
          ports:
            - containerPort: 80
              protocol: TCP
          resources: {}
-- INSERT --
35,21 33%
```

Text Description automatically generated

```

File Edit View Terminal Tabs Help
backend-deployment-59d449b99d-h2zjq 0/1 Running 0 9s
backend-deployment-78976f74f5-b8c85 1/1 Running 0 6h40m
backend-deployment-78976f74f5-flfsj 1/1 Running 0 6h40m
candidate@node-1:~$ kubectl get deploy -n staging
NAME READY UP-TO-DATE AVAILABLE AGE
backend-deployment 3/3 3 3 6h40m
candidate@node-1:~$ kubectl get deploy -n staging
NAME READY UP-TO-DATE AVAILABLE AGE
backend-deployment 3/3 3 3 6h41m
candidate@node-1:~$ vim ~/spicy-pikachu/backend-deployment.yaml
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl set serviceaccount deploy app-1 app -n frontend
deployment.apps/app-1 serviceaccount updated
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ vim ~/prompt-escargot/buffalo-deployment.yaml
candidate@node-1:~$ vim ~/prompt-escargot/buffalo-deployment.yaml
candidate@node-1:~$ kubectl apply -f ~/prompt-escargot/buffalo-deployment.yaml
deployment.apps/buffalo-deployment configured
candidate@node-1:~$ kubectl get pods -n gorilla
NAME READY STATUS RESTARTS AGE
buffalo-deployment-776844df7f-r5fsb 1/1 Running 0 6h38m
buffalo-deployment-859898c6f5-zx5gj 0/1 ContainerCreating 0 8s
candidate@node-1:~$ kubectl get deploy -n gorilla
NAME READY UP-TO-DATE AVAILABLE AGE
buffalo-deployment 1/1 1 1 6h38m
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl edit deploy ckad00017-deployment -n ckad00017
deployment.apps/ckad00017-deployment edited
candidate@node-1:~$

```

```

File Edit View Terminal Tabs Help
candidate@node-1:~$ kubectl get pods -n gorilla
NAME READY STATUS RESTARTS AGE
buffalo-deployment-776844df7f-r5fsb 1/1 Running 0 6h38m
buffalo-deployment-859898c6f5-zx5gj 0/1 ContainerCreating 0 8s
candidate@node-1:~$ kubectl get deploy -n gorilla
NAME READY UP-TO-DATE AVAILABLE AGE
buffalo-deployment 1/1 1 1 6h38m
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ kubectl edit deploy ckad00017-deployment -n ckad00017
deployment.apps/ckad00017-deployment edited
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose deploy ckad00017-deployment -n ckad0001
ckad00014 ckad00015 ckad00017
candidate@node-1:~$ kubectl expose service/cherry -n ckad00017 --name=cherry --port=8888 --type=NodePort
service/cherry exposed
candidate@node-1:~$

```

```

candidate@node-1:~$ kubectl get svc
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
kubernetes ClusterIP 10.96.0.1 <none> 443/TCP 77d
candidate@node-1:~$ kubectl get svc -n ckad00017
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
cherry NodePort 10.100.100.176 <none> 8888:30683/TCP 24s
candidate@node-1:~$ kubectl expose service deploy ckad00017-deployment -n ckad00017 --name=cherry --port=8888 --type=NodePort
Error from server (NotFound): services "deploy" not found
Error from server (NotFound): services "ckad00017-deployment" not found
candidate@node-1:~$ kubectl get svc -n ckad00017
NAME TYPE CLUSTER-IP EXTERNAL-IP PORT(S) AGE
cherry NodePort 10.100.100.176 <none> 8888:30683/TCP 46s
candidate@node-1:~$

```

```

File Edit View Terminal Tabs Help
candidate@node-1:~$ kubectl expose service deploy ckad00017-deployment -n ckad00017 --name=cherry --port=8888 --type=NodePort
Error from server (NotFound): services "deploy" not found
Error from server (NotFound): services "ckad00017-deployment" not found
candidate@node-1:~$ kubectl get svc -n ckad00017
NAME      TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)          AGE
cherry    NodePort  10.100.100.176  <none>           8888:30683/TCP   46s
candidate@node-1:~$ history
 1 vi ~/spicy-pikachu/backend-deployment.yaml
 2 kubectl config use-context sk8s
 3 vim .vimrc
 4 vim ~/spicy-pikachu/backend-deployment.yaml
 5 kubectl apply -f ~/spicy-pikachu/backend-deployment.yaml
 6 kubectl get pods -n staging
 7 kubectl get deploy -n staging
 8 vim ~/spicy-pikachu/backend-deployment.yaml
 9 kubectl config use-context k8s
10 kubectl set serviceaccount deploy app-1 app -n frontend
11 kubectl config use-context k8s
12 vim ~/prompt-escargot/buffalo-deployment.yaml
13 kubectl apply -f ~/prompt-escargot/buffalo-deployment.yaml
14 kubectl get pods -n gorilla
15 kubectl get deploy -n gorilla
16 kubectl config use-context k8s
17 kubectl edit deploy ckad00017-deployment -n ckad00017
18 kubectl expose deploy ckad00017-deployment -n ckad00017 --name=cherry --port=8888 --type=NodePort
19 kubectl get svc
20 kubectl get svc -n ckad00017
21 kubectl expose service deploy ckad00017-deployment -n ckad00017 --name=cherry --port=8888 --type=NodePort
22 kubectl get svc -n ckad00017
23 history
candidate@node-1:~$

```

NEW QUESTION 7

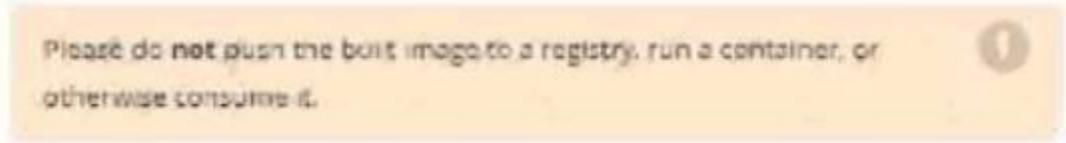
Exhibit:



Task:

A Dockerfile has been prepared at `~/humane-stork/build/Dockerfile`

Multiple image builders and tools have been pre-installed at the base system, including: `docker`, `skopeo`, `buildah`, `img`, and `podman`.



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```

candidate@node-1:~$ cd humane-stork/build/
candidate@node-1:~/humane-stork/build$ ls -l
total 16
-rw-r--r-- 1 candidate candidate 201 Sep 24 04:21 Dockerfile
-rw-r--r-- 1 candidate candidate 644 Sep 24 04:21 text1.html
-rw-r--r-- 1 candidate candidate 813 Sep 24 04:21 text2.html
-rw-r--r-- 1 candidate candidate 383 Sep 24 04:21 text3.html
candidate@node-1:~/humane-stork/build$ sudo docker build -t macaque:3.0 .
Sending build context to Docker daemon  6.144kB
Step 1/5 : FROM docker.io/lfccncf/nginx:mainline
--> ea335eea17ab
Step 2/5 : ADD text1.html /usr/share/nginx/html/
--> 8967ee9ee5d0
Step 3/5 : ADD text2.html /usr/share/nginx/html/
--> cb0554422f26
Step 4/5 : ADD text3.html /usr/share/nginx/html/
--> 62e879ab821e
Step 5/5 : COPY text2.html /usr/share/nginx/html/index.html
--> 331c8a94372c
Successfully built 331c8a94372c
Successfully tagged macaque:3.0
candidate@node-1:~/humane-stork/build$ sudo docker save macaque:3.0 > ~/humane-stork/macaque-3.0.tar
candidate@node-1:~/humane-stork/build$ cd ..
candidate@node-1:~/humane-stork$ ls -l
total 142532
drwxr-xr-x 2 candidate candidate    4096 Sep 24 04:21 build
-rw-rw-r-- 1 candidate candidate 145948672 Sep 24 11:39 macaque-3.0.tar
candidate@node-1:~/humane-stork$

```

NEW QUESTION 8

Exhibit:



Context

A pod is running on the cluster but it is not responding. Task

The desired behavior is to have Kubemetes restart the pod when an endpoint returns an HTTP 500 on the /healthz endpoint. The service, probe-pod, should never send traffic to the pod while it is failing. Please complete the following:

- The application has an endpoint, /started, that will indicate if it can accept traffic by returning an HTTP 200. If the endpoint returns an HTTP 500, the application has not yet finished initialization.
- The application has another endpoint /healthz that will indicate if the application is still working as expected by returning an HTTP 200. If the endpoint returns an HTTP 500 the application is no longer responsive.
- Configure the probe-pod pod provided to use these endpoints
- The probes should use port 8080

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

apiVersion: v1 kind: Pod metadata: labels:

test: liveness

name: liveness-exec

spec: containers:

- name: liveness

image: k8s.gcr.io/busybox

args:

- /bin/sh

- -c

- touch /tmp/healthy; sleep 30; rm -rf /tmp/healthy; sleep 600

livenessProbe: exec: command:

- cat

- /tmp/healthy

initialDelaySeconds: 5

periodSeconds: 5

In the configuration file, you can see that the Pod has a single Container. The periodSeconds field specifies that the kubelet should perform a liveness probe every 5 seconds. The initialDelaySeconds field tells the kubelet that it should wait 5 seconds before performing the first probe. To perform a probe, the kubelet executes the command cat /tmp/healthy in the target container. If the command succeeds, it returns 0, and the kubelet considers the container to be alive and healthy. If the command returns a non-zero value, the kubelet kills the container and restarts it.

When the container starts, it executes this command:

/bin/sh -c "touch /tmp/healthy; sleep 30; rm -rf /tmp/healthy; sleep 600"

For the first 30 seconds of the container's life, there is a /tmp/healthy file. So during the first 30 seconds, the command cat /tmp/healthy returns a success code.

After 30 seconds, cat /tmp/healthy returns a failure code

Create the Pod:

kubectl apply -f https://k8s.io/examples/pods/probe/exec-liveness.yaml Within 30 seconds, view the Pod events:

kubectl describe pod liveness-exec

The output indicates that no liveness probes have failed yet:

FirstSeen LastSeen Count From SubobjectPath Type Reason Message

```
-----
24s 24s 1 {default-scheduler } Normal Scheduled Successfully assigned liveness-exec to worker0
23s 23s 1 {kubelet worker0} spec.containers{liveness} Normal Pulling pulling image "k8s.gcr.io/busybox"
23s 23s 1 {kubelet worker0} spec.containers{liveness} Normal Pulled Successfully pulled image "k8s.gcr.io/busybox"
```

```
23s 23s 1 {kubelet worker0} spec.containers{liveness} Normal Created Created container with docker id 86849c15382e; Security:[seccomp=unconfined]
```

```
23s 23s 1 {kubelet worker0} spec.containers{liveness} Normal Started Started container with docker id 86849c15382e
```

After 35 seconds, view the Pod events again: kubectl describe pod liveness-exec

At the bottom of the output, there are messages indicating that the liveness probes have failed, and the containers have been killed and recreated.

FirstSeen LastSeen Count From SubobjectPath Type Reason Message

```
-----
37s 37s 1 {default-scheduler } Normal Scheduled Successfully assigned liveness-exec to worker0
36s 36s 1 {kubelet worker0} spec.containers{liveness} Normal Pulling pulling image "k8s.gcr.io/busybox"
36s 36s 1 {kubelet worker0} spec.containers{liveness} Normal Pulled Successfully pulled image "k8s.gcr.io/busybox"
```

```
36s 36s 1 {kubelet worker0} spec.containers{liveness} Normal Created Created container with docker id 86849c15382e; Security:[seccomp=unconfined]
```

```
36s 36s 1 {kubelet worker0} spec.containers{liveness} Normal Started Started container with docker id 86849c15382e
```

```
2s 2s 1 {kubelet worker0} spec.containers{liveness} Warning Unhealthy Liveness probe failed: cat: can't open '/tmp/healthy': No such file or directory
```

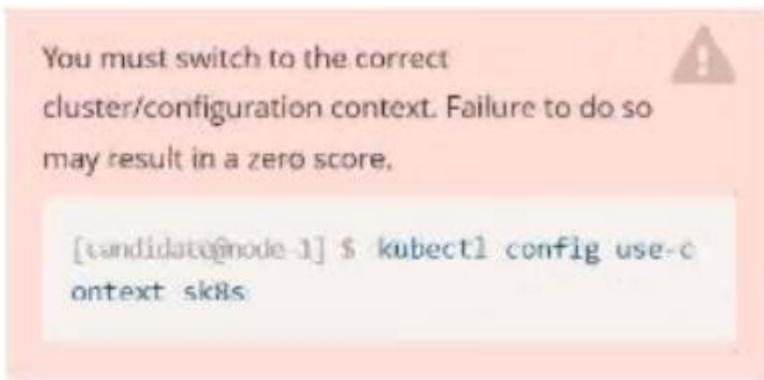
Wait another 30 seconds, and verify that the container has been restarted: kubectl get pod liveness-exec

The output shows that RESTARTS has been incremented: NAME READY STATUS RESTARTS AGE

```
liveness-exec 1/1 Running 1 1m
```

NEW QUESTION 9

Exhibit:



Task:

Modify the existing Deployment named broker-deployment running in namespace quetzal so that its containers. The broker-deployment is manifest file can be found at:

```
~/daring-mocccasin/broker-deployment.yaml
```

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ vim
```

Text Description automatically generated

```
File Edit View Terminal Tabs Help
containers:
- name: broker
  image: redis:alpine
  ports:
  - containerPort: 6379
securityContext:
  runAsUser: 30000
  privileged: false

candidate@node-1:~$ kubectl config use-context k8s
Switched to context "k8s".
candidate@node-1:~$ vim ~/daring-mocccasin/broker-deployment.yaml
candidate@node-1:~$ kubectl apply -f ~/daring-mocccasin/broker-deployment.yaml
deployment.apps/broker-deployment configured
candidate@node-1:~$ kubectl get pods -n quetzal
NAME                                READY   STATUS    RESTARTS   AGE
broker-deployment-65446d6d94-868p6  1/1     Running   0           30s
broker-deployment-65446d6d94-8dn7l  1/1     Running   0           32s
broker-deployment-65446d6d94-p4h4l  1/1     Running   0           31s
candidate@node-1:~$ kubectl get deploy -n quetzal
NAME                READY   UP-TO-DATE   AVAILABLE   AGE
broker-deployment  3/3     3             3           7h3m
candidate@node-1:~$
```

NEW QUESTION 10

Exhibit:

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

Given a container that writes a log file in format A and a container that converts log files from format A to format B, create a deployment that runs both containers such that the log files from the first container are converted by the second container, emitting logs in format B.

Task:

- Create a deployment named deployment-xyz in the default namespace, that:
 - Includes a primary lfcncf/busybox:1 container, named logger-dev
 - Includes a sidecar lfcncf/fluentd:v0.12 container, named adapter-zen
 - Mounts a shared volume /tmp/log on both containers, which does not persist when the pod is deleted
 - Instructs the logger-dev container to run the command

```
while true; do
echo "i luv cncf" >> /
tmp/log/input.log;
sleep 10;
done
```

which should output logs to /tmp/log/input.log in plain text format, with example values:

```
i luv cncf
i luv cncf
i luv cncf
```

- The adapter-zen sidecar container should read /tmp/log/input.log and output the data to /tmp/log/output.* in Fluentd JSON format. Note that no knowledge of Fluentd is required to complete this task: all you will need to achieve this is to create the ConfigMap from the spec file provided at /opt/KDMC00102/fluentd-configmap.p.yaml, and mount that ConfigMap to /fluentd/etc in the adapter-zen sidecar container

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

The first screenshot shows the terminal commands to create a deployment and edit its configuration:

```
student@node-1:~$ kubectl create deployment deployment-xyz --image=lfcncf/busybox:1 --dry-run=client -o yaml > deployment_xyz.yml
student@node-1:~$ vim deployment_xyz.yml
```

The second screenshot shows the resulting deployment configuration in a text editor:

```
apiVersion: apps/v1
kind: Deployment
metadata:
  creationTimestamp: null
  labels:
    app: deployment-xyz
  name: deployment-xyz
spec:
  replicas: 1
  selector:
    matchLabels:
      app: deployment-xyz
  strategy: {}
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: deployment-xyz
    spec:
      containers:
      - image: lfcncf/busybox:1
        name: busybox
        resources: {}
status: {}
```

Readme Web Terminal THE LINUX FOUNDATION

```

kind: Deployment
metadata:
  labels:
    app: deployment-xyz
    name: deployment-xyz
spec:
  replicas: 1
  selector:
    matchLabels:
      app: deployment-xyz
  template:
    metadata:
      labels:
        app: deployment-xyz
    spec:
      volumes:
      - name: myvoll
        emptyDir: {}
      containers:
      - image: lfcncf/busybox:1
        name: logger-dev
        volumeMounts:
        - name: myvoll
          mountPath: /tmp/log
      - image: lfcncf/fluentd:v0.12
        name: adapter-zen
3 lines yanked
27,22 Bot

```

Readme Web Terminal THE LINUX FOUNDATION

```

replicas: 1
selector:
  matchLabels:
    app: deployment-xyz
template:
  metadata:
    labels:
      app: deployment-xyz
  spec:
    volumes:
    - name: myvoll
      emptyDir: {}
    containers:
    - image: lfcncf/busybox:1
      name: logger-dev
      command: ["/bin/sh", "-c", "while [ true ]; do echo 'i luv cncf' >> /tmp/log/input.log; sleep 10; done"]
      volumeMounts:
      - name: myvoll
        mountPath: /tmp/log
    - image: lfcncf/fluentd:v0.12
      name: adapter-zen
      command: ["/bin/sh", "-c", "tail -f /tmp/log/input.log >> /tmp/log/output.log"]
      volumeMounts:
      - name: myvoll
        mountPath: /tmp/log
29,83 Bot

```

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```

metadata:
  labels:
    app: deployment-xyz
spec:
  volumes:
  - name: myvol1
    emptyDir: {}
  - name: myvol2
    configMap:
      name: logconf
  containers:
  - image: lfccncf/busybox:1
    name: logger-dev
    command: ["/bin/sh", "-c", "while [ true ]; do echo 'i luv cncf' >> /tmp/log/input.log; sleep 10; done"]
    volumeMounts:
    - name: myvol1
      mountPath: /tmp/log
  - image: lfccncf/fluentd:v0.12
    name: adapter-zen
    command: ["/bin/sh", "-c", "tail -f /tmp/log/input.log >> /tmp/log/output.log"]
    volumeMounts:
    - name: myvol1
      mountPath: /tmp/log
    - name: myvol2
      mountPath: /fluentd/etc
  
```

37,33 Bot

```

student@node-1:~$ kubectl create -f deployment_xyz.yml
deployment.apps/deployment-xyz created
student@node-1:~$ kubectl get deployment
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz 0/1     1             0           5s
student@node-1:~$ kubectl get deployment
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz 0/1     1             0           9s
student@node-1:~$ kubectl get deployment
NAME          READY   UP-TO-DATE   AVAILABLE   AGE
deployment-xyz 1/1     1             1           12s
student@node-1:~$
  
```

NEW QUESTION 10

.....

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