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QUESTION 1

CORRECT TEXT

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:

1.

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.

2.

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.

3.

Configure the probe-pod pod provided to use these endpoints

4.

The probes should use port 8080

A. Please check explanations

B. Place Holder

Correct Answer: A

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

QUESTION 2

CORRECT TEXT

Context

Developers occasionally need to submit pods that run periodically.

Task

Follow the steps below to create a pod that will start at a predetermined time and]which runs to completion only once each time it is started:

Create a YAML formatted Kubernetes manifest /opt/KDPD00301/periodic.yaml that runs the following shell command: date in a single busybox container.

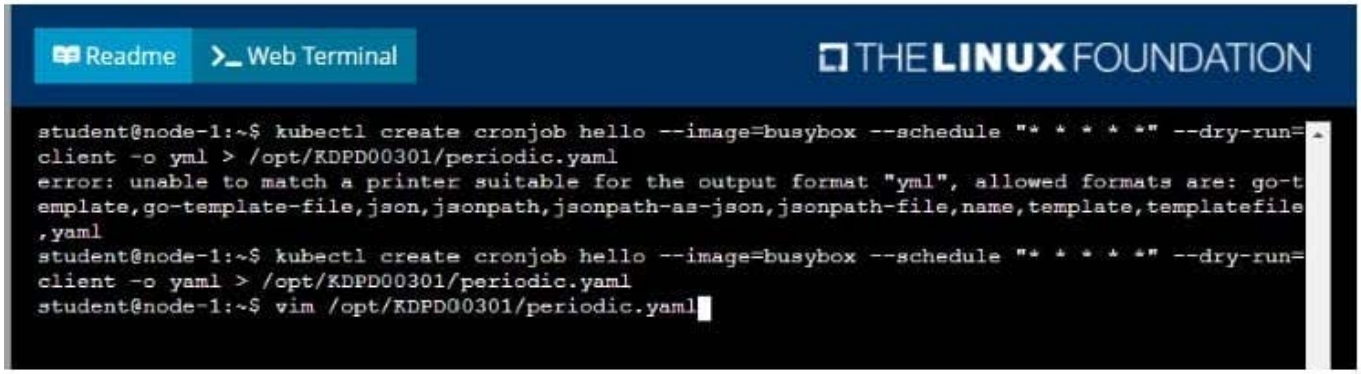
The command should run every minute and must complete within 22 seconds or be terminated oy Kubernetes. The Cronjob name and container name should both be hello

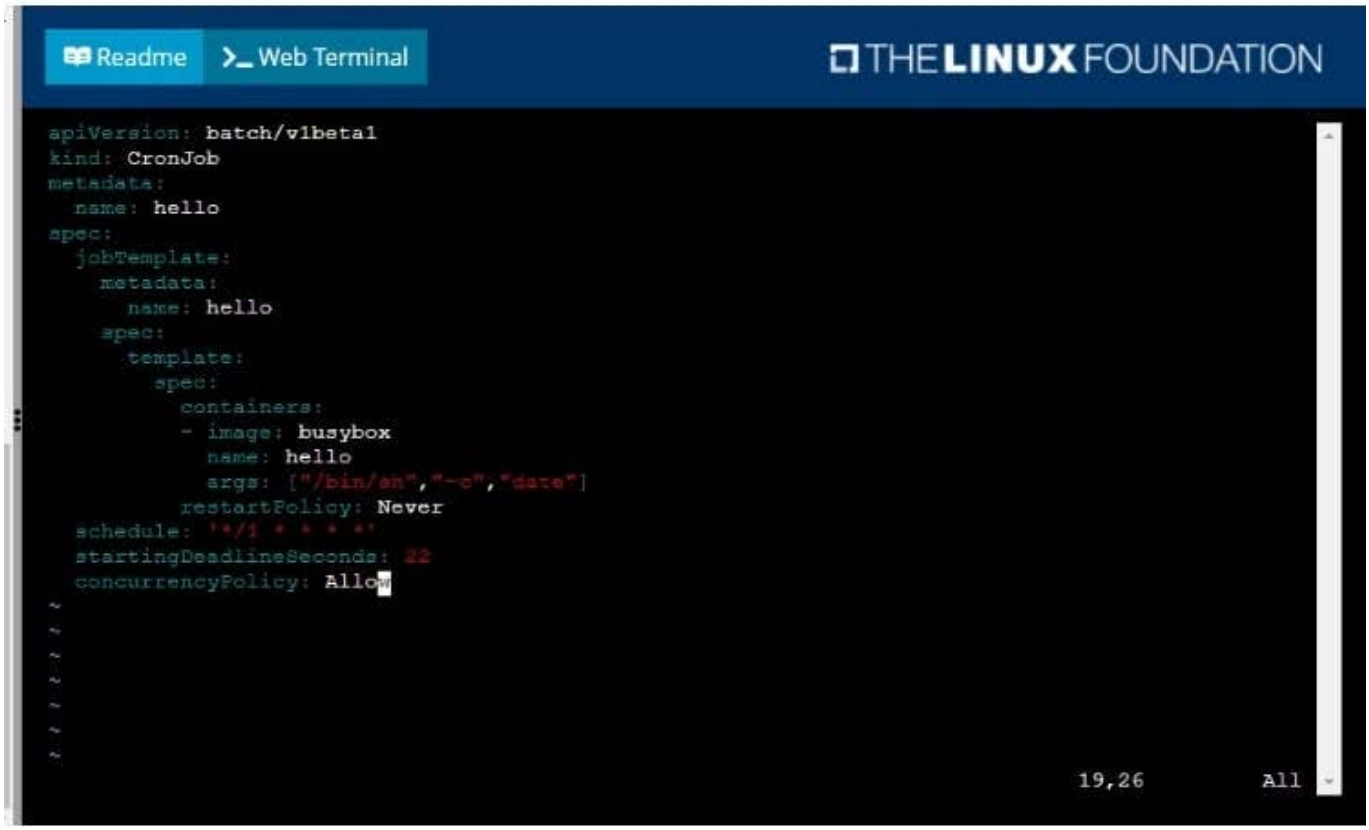
Create the resource in the above manifest and verify that the job executes successfully at least once

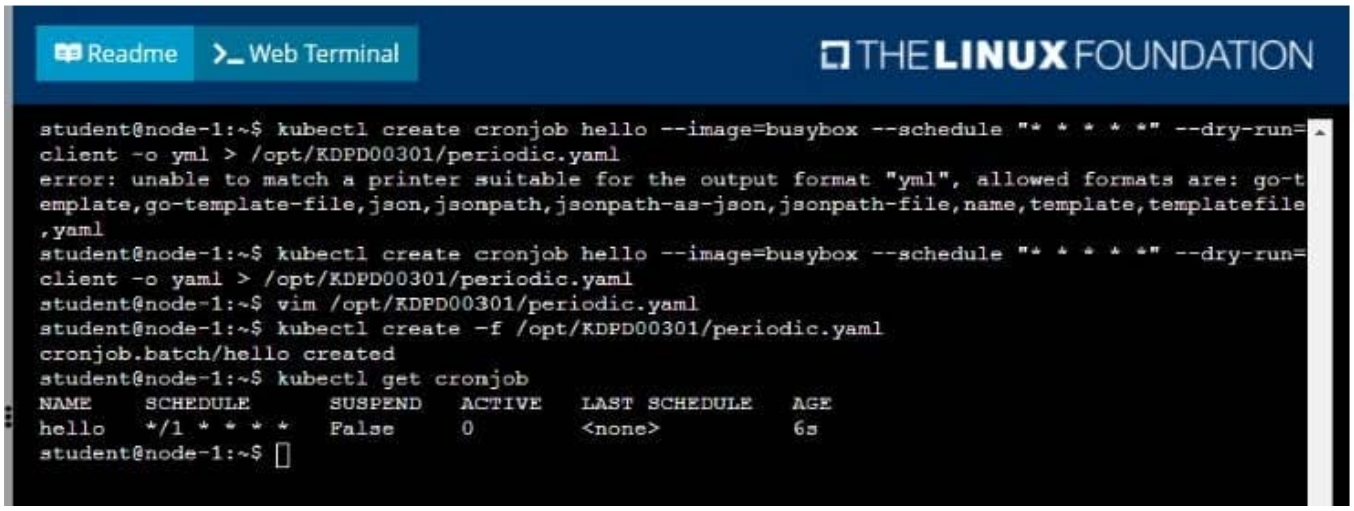
A. Please check explanations

B. Place Holder

Correct Answer: A

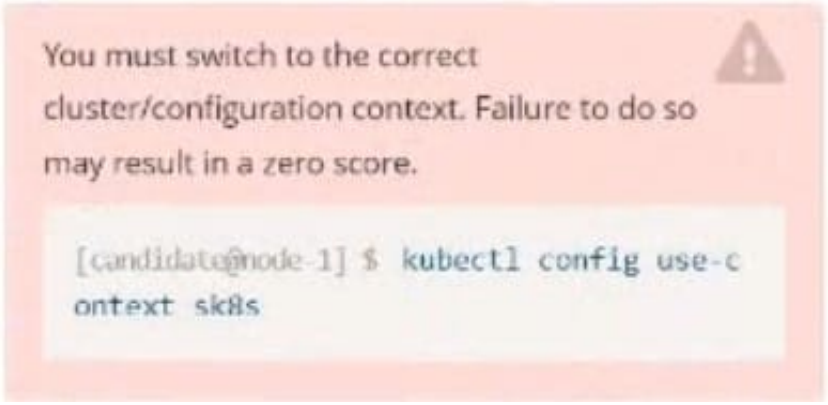

Readme
Web Terminal
THE LINUX FOUNDATION
student@node-1:~$ kubectl create cronjob hello --image=busybox --schedule "* * * * *" --dry-run=client -o yml > /opt/KDPD00301/periodic.yaml
error: unable to match a printer suitable for the output format "yml", allowed formats are: go-template,go-template-file,json,jsonpath,jsonpath-as-json,jsonpath-file,name,template,templatefile,yaml
student@node-1:~$ kubectl create cronjob hello --image=busybox --schedule "* * * * *" --dry-run=client -o yaml > /opt/KDPD00301/periodic.yaml
student@node-1:~$ vim /opt/KDPD00301/periodic.yaml


Readme
Web Terminal
THE LINUX FOUNDATION
apiVersion: batch/v1beta1
kind: CronJob
metadata:
name: hello
spec:
jobTemplate:
metadata:
name: hello
spec:
template:
spec:
containers:
- image: busybox
name: hello
args: ["/bin/sh","-c","date"]
restartPolicy: Never
schedule: '*/1 * * * *'
startingDeadlineSeconds: 22
concurrencyPolicy: Allow
19,26 All


Readme
Web Terminal
THE LINUX FOUNDATION
student@node-1:~$ kubectl create cronjob hello --image=busybox --schedule "* * * * *" --dry-run=client -o yml > /opt/KDPD00301/periodic.yaml
error: unable to match a printer suitable for the output format "yml", allowed formats are: go-template,go-template-file,json,jsonpath,jsonpath-as-json,jsonpath-file,name,template,templatefile,yaml
student@node-1:~$ kubectl create cronjob hello --image=busybox --schedule "* * * * *" --dry-run=client -o yaml > /opt/KDPD00301/periodic.yaml
student@node-1:~$ vim /opt/KDPD00301/periodic.yaml
student@node-1:~$ kubectl create -f /opt/KDPD00301/periodic.yaml
cronjob.batch/hello created
student@node-1:~$ kubectl get cronjob
NAME SCHEDULE SUSPEND ACTIVE LAST SCHEDULE AGE
hello */1 * * * * False 0 <none> 6s
student@node-1:~$

QUESTION 3

CORRECT TEXT



Task:

Modify the existing Deployment named broker-deployment running in namespace quetzal so that its containers.

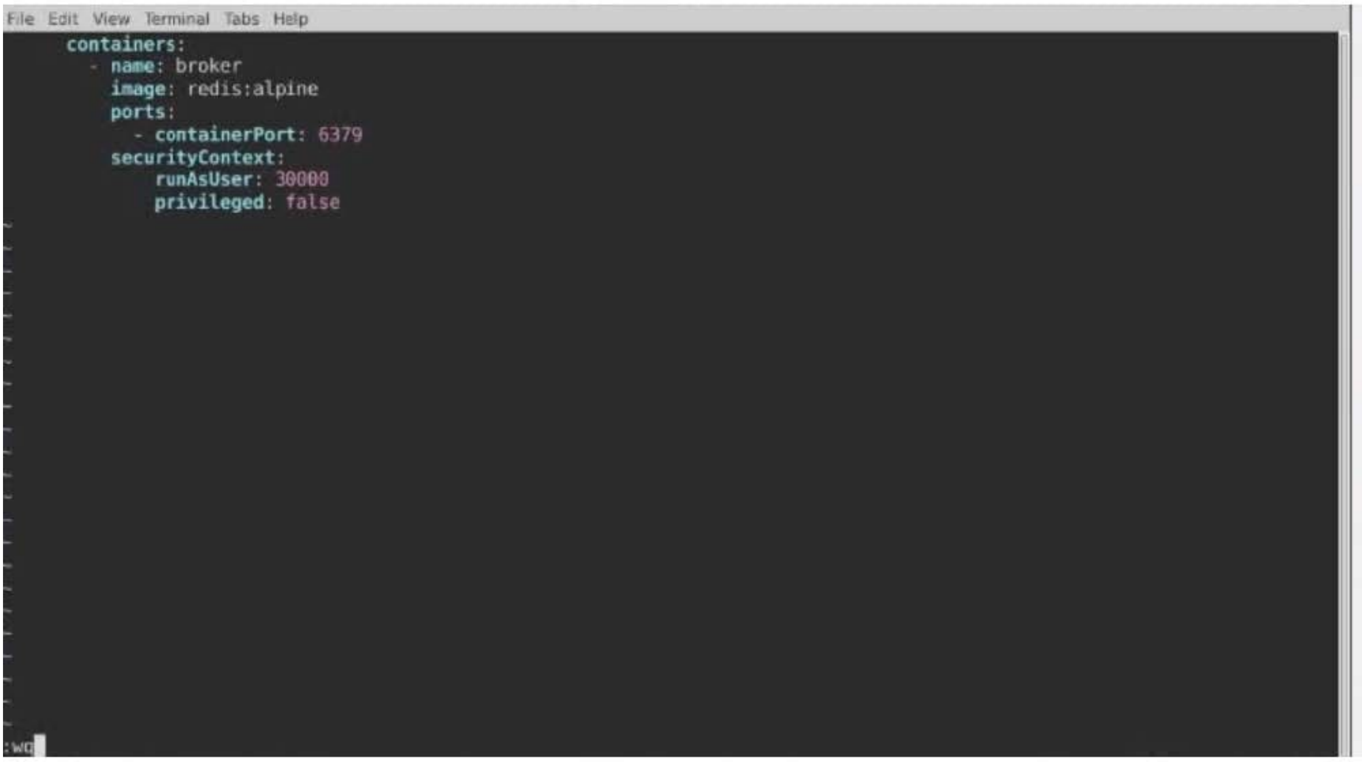
The broker-deployment is manifest file can be found at:

~/daring-moccasin/broker-deployment.yaml

A. Please check explanations

B. Place Holder

Correct Answer: A

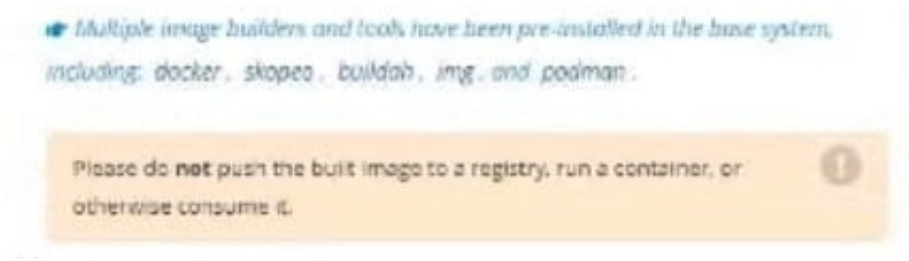


QUESTION 4

CORRECT TEXT

Task:

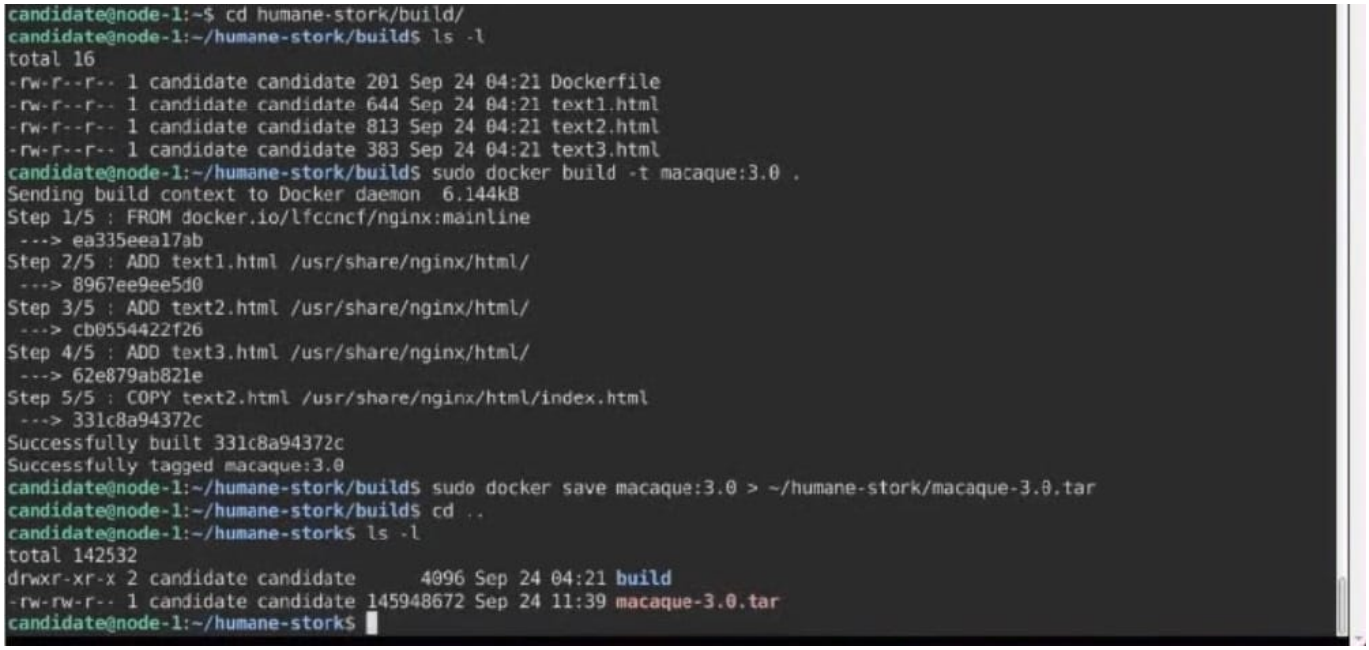
A Dockerfile has been prepared at -/human-stork/build/Dockerfile



A. Please check explanations

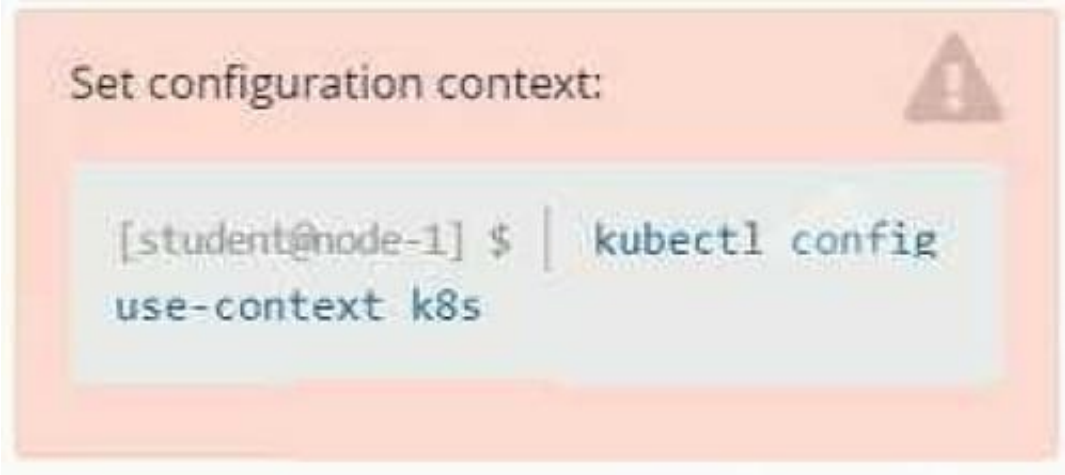
B. Place Holder

Correct Answer: A



QUESTION 5

CORRECT TEXT



Context

It is always useful to look at the resources your applications are consuming in a cluster.

Task

From the pods running in namespace cpu-stress, write the name only of the pod that is consuming the most CPU to file /opt/KDOBG030l/pod.txt, which has already been created.

A. Please check explanations

B. Place Holder

Correct Answer: A