CKAD Q&As

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QUESTION 1

Exhibit:

Task

A deployment is falling on the cluster due to an incorrect image being specified. Locate the deployment,

and fix the problem.

A. Please check explations

B. Place Holder

Correct Answer: AB

Pending

QUESTION 2

Exhibit:

Set configuration context:

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


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. Please check explations

B. Place Holder

Correct Answer: AB

Solution: 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 nonzero 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

```yaml
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
```


QUESTION 3

Context Anytime a team needs to run a container on Kubernetes they will need to define a pod within which to run the container. Task Please complete the following: Create a YAML formatted pod manifest /opt/KDPD00101/podl.yml to create a pod named app1 that runs a container named app1cont using image lfccncf/arg-output with these command line arguments: -lines 56 -F Create the pod with the kubect1 command using the YAML file created in the previous step When the pod is running display summary data about the pod in JSON format using the kubect1 command and redirect the output to a file named /opt/KDPD00101/out1.json All of the files you need to work with have been created, empty, for your convenience

When creating your pod, you do not need to specify a container command, only args.

A. Please check explations

B. Place Holder

Correct Answer: AB

Solution:

```
student@node-1:~$ kubectl run app1 --image=lfccncf/arg-output --dry-run=client -o yaml > /opt/KD
PD00101/pod1.yml
student@node-1:~$ vim /opt/KDPD00101/pod1.yml
```

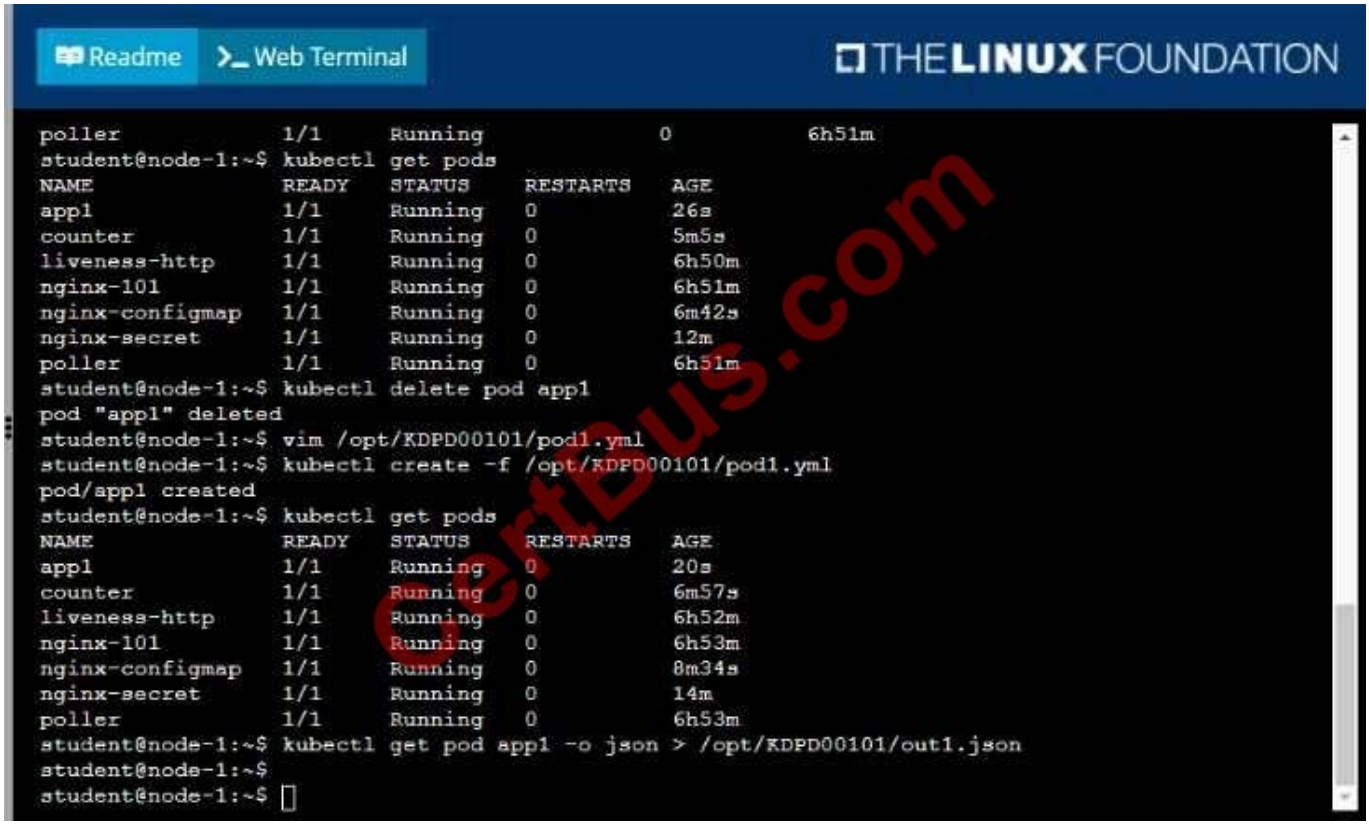
```
apiVersion: v1
kind: Pod
metadata:
  creationTimestamp: null
  labels:
    run: app1
  name: app1
spec:
  containers:
  - image: lfccncf/arg-output
    name: app1
    resources: {}
  dnsPolicy: ClusterFirst
  restartPolicy: Always
status: {}
~
~
~
~
~
~
~
~
~
~
~
"/opt/KDPD00101/pod1.yml" 15L, 242C                                     3,1           All
```

```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: app1
  name: app1
spec:
  containers:
  - image: lfccncf/arg-output
    name: app1
    args: ["--lines","56","-F"]
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
                                                                        11,30         All
```

```
pod/app1 created
student@node-1:~$ kubectl get pods
NAME              READY   STATUS              RESTARTS   AGE
app1              0/1     ContainerCreating   0          5s
counter           1/1     Running             0          4m44s
liveness-http     1/1     Running             0          6h50m
nginx-101         1/1     Running             0          6h51m
nginx-configmap   1/1     Running             0          6m21s
nginx-secret      1/1     Running             0          11m
poller            1/1     Running             0          6h51m
student@node-1:~$ kubectl get pods
NAME              READY   STATUS    RESTARTS   AGE
app1              1/1     Running   0          26s
counter           1/1     Running   0          5m5s
liveness-http     1/1     Running   0          6h50m
nginx-101         1/1     Running   0          6h51m
nginx-configmap   1/1     Running   0          6m42s
nginx-secret      1/1     Running   0          12m
poller            1/1     Running   0          6h51m
student@node-1:~$ kubectl delete pod app1
pod "app1" deleted
student@node-1:~$ vim /opt/KDPD00101/pod1.yml
```

Readme | Web Terminal

```
nginx-configmap   1/1     Running             0          6m2
nginx-secret      1/1     Running             0          11m
poller            1/1     Running             0          6h5
student@node-1:~$ kubectl get pods
NAME              READY   STATUS    RESTARTS   AGE
app1              1/1     Running   0          26s
counter           1/1     Running   0          5m5s
liveness-http     1/1     Running   0          6h50m
nginx-101         1/1     Running   0          6h51m
nginx-configmap   1/1     Running   0          6m42s
nginx-secret      1/1     Running   0          12m
poller            1/1     Running   0          6h51m
student@node-1:~$ kubectl delete pod app1
pod "app1" deleted
student@node-1:~$ vim /opt/KDPD00101/pod1.yml
student@node-1:~$ kubectl create -f /opt/KDPD00101/pod1.yml
pod/app1 created
student@node-1:~$ kubectl get pods
NAME              READY   STATUS    RESTARTS   AGE
app1              1/1     Running   0          20s
counter           1/1     Running   0          6m57s
liveness-http     1/1     Running   0          6h52m
nginx-101         1/1     Running   0          6h53m
nginx-configmap   1/1     Running   0          8m34s
nginx-secret      1/1     Running   0          14m
poller            1/1     Running   0          6h53m
student@node-1:~$ kubectl get pod app1 -o json >
```



QUESTION 4

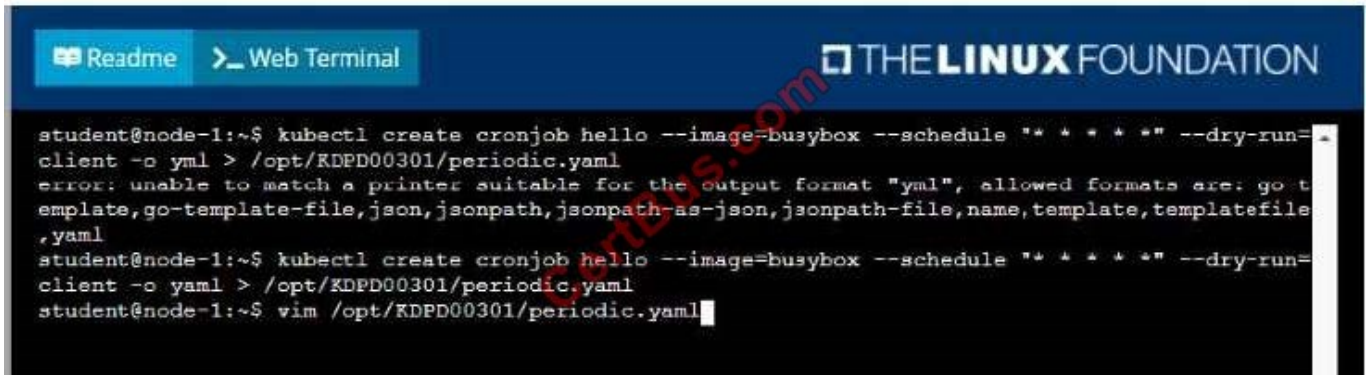
Exhibit: Context Developers occasionally need to submit pods that run periodically. Task Follow the steps below to create a pod that will start at a predetermined time and]which runs to completion only once each time it is started: Create a YAML formatted Kubernetes manifest /opt/KDPD00301/periodic.yaml 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 namp and container name should both be hello Create the resource in the above manifest and verify that the job executes successfully at least once

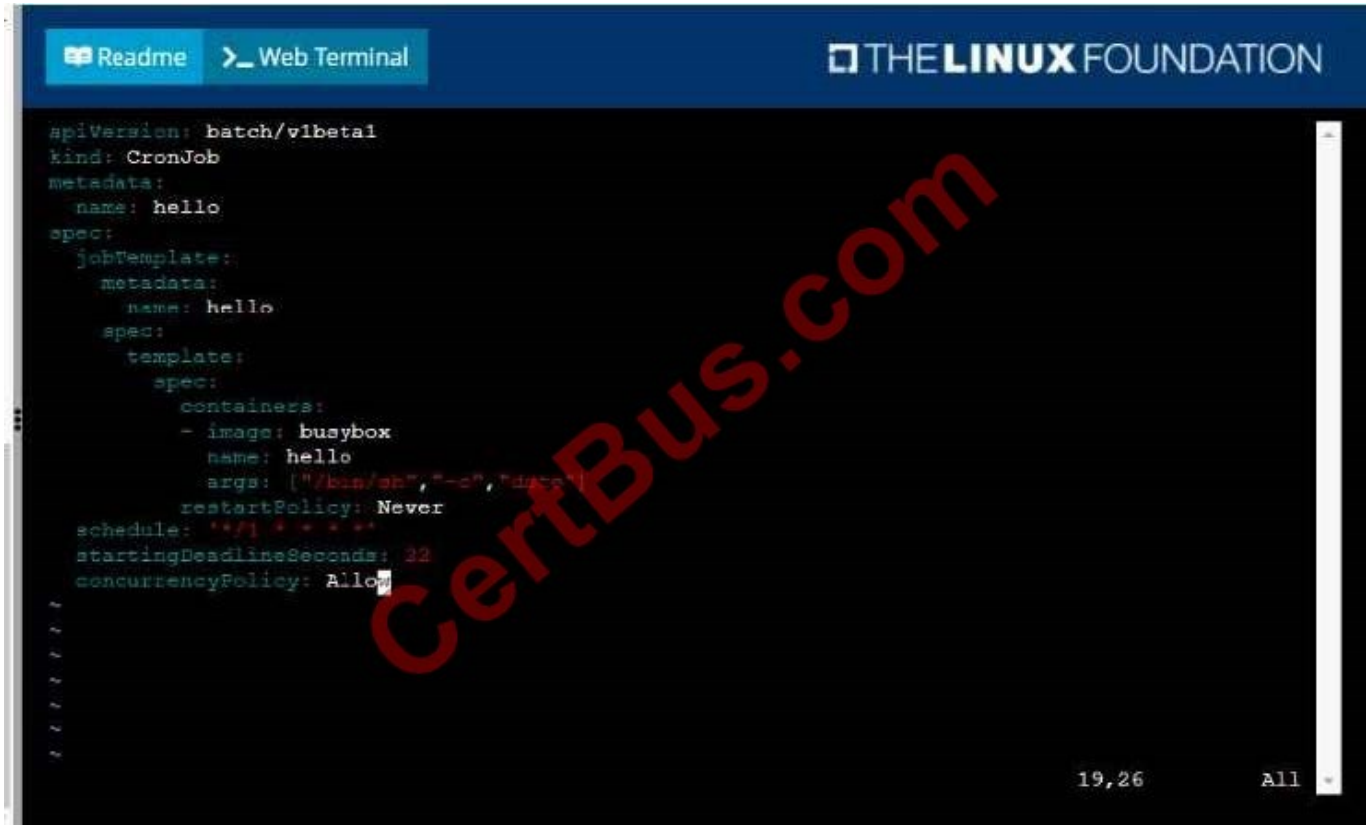
A. Please check explations

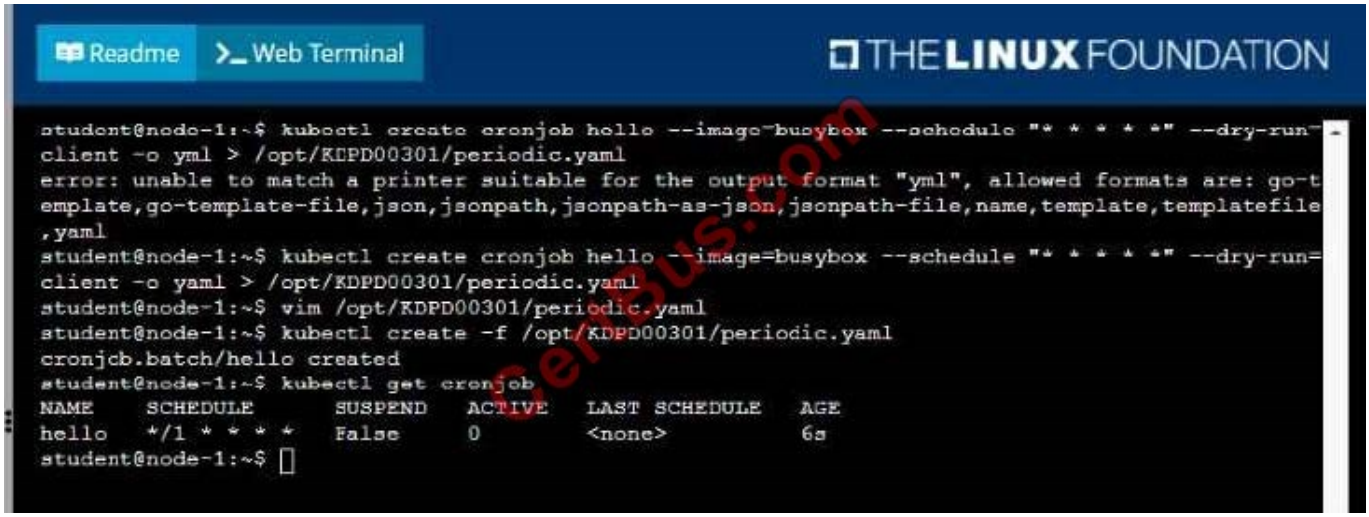
B. Place Holder

Correct Answer: AB

Solution:







QUESTION 5

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 lfccncf/redis image with the 3.2 tag Expose port 6379

A. Please check explations

B. Place Holder

Correct Answer: AB

Solution: