

Linux-Foundation

Exam Questions CKAD

Certified Kubernetes Application Developer (CKAD) Program



NEW QUESTION 1

Exhibit:



Context

A user has reported an application is unteachable due to a failing livenessProbe . Task

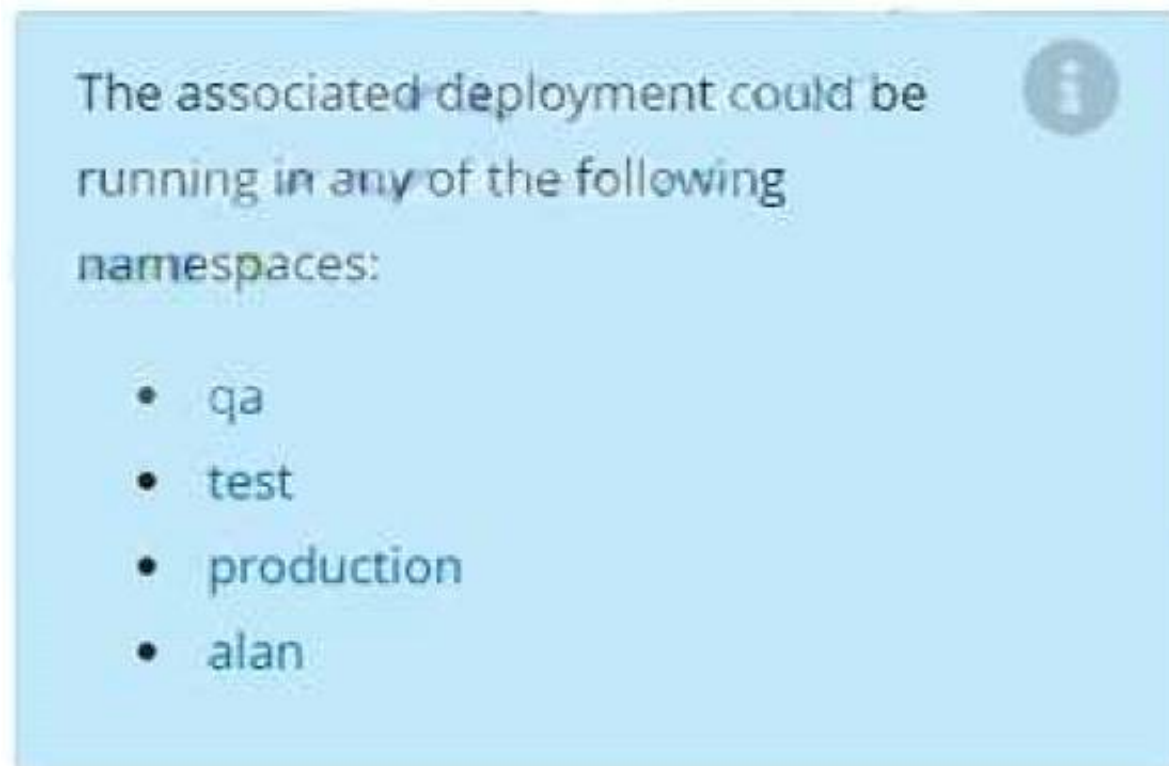
Perform the following tasks:

- Find the broken pod and store its name and namespace to /opt/KDOB00401/broken.txt in the format:



The output file has already been created

- Store the associated error events to a file /opt/KDOB00401/error.txt, The output file has already been created. You will need to use the -o wide output specifier with your command
- Fix the issue.



- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

Create the Pod: kubectlcreate-f

[http://k8s.io/docs/tasks/configure-pod-container/](http://k8s.io/docs/tasks/configure-pod-container/exec-liveness.yaml)

exec-liveness.yaml

Within 30 seconds, view the Pod events: kubectldescribe pod liveness-exec

The output indicates that no liveness probes have failed yet:

FirstSeen LastSeen CountFrom SubobjectPath Type Reason Message

```
-----
24s 24s 1{default-scheduler } NormalScheduled Successfully assigned liveness-exec to worker0
23s 23s 1{kubelet worker0} spec.containers{liveness} NormalPulling pulling image"gcr.io/google_containers/busybox"
23s 23s 1{kubelet worker0} spec.containers{liveness} NormalPulled Successfully pulled image"gcr.io/google_containers/busybox"
23s 23s 1{kubelet worker0} spec.containers{liveness} NormalCreated Created container with docker id86849c15382e; Security:[seccomp=unconfined]
23s 23s 1{kubelet worker0} spec.containers{liveness} NormalStarted Started container with docker id86849c15382e
```

After 35 seconds, view the Pod events again: kubectldescribe 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-exectoworker0
36s 36s 1{kubelet worker0} spec.containers{liveness} Normal Pulling pulling image"gcr.io/google_containers/busybox"
36s 36s 1{kubelet worker0} spec.containers{liveness} Normal Pulled Successfully pulled image"gcr.io/google_containers/busybox"
```

```
36s 36s 1{kubelet worker0} spec.containers{liveness} Normal Created Created containerwithdocker id86849c15382e; Security:[seccomp=unconfined]
36s 36s 1{kubelet worker0} spec.containers{liveness} Normal Started Started containerwithdocker id86849c15382e
2s 2s 1{kubelet worker0} spec.containers{liveness} Warning Unhealthy Liveness probe failed: cat: can't open
'/tmp/healthy': No suchfileordirectory
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:
NAMEREADY STATUSRESTARTS AGE
liveness-exec 1/1Running 1m
```

NEW QUESTION 2

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.

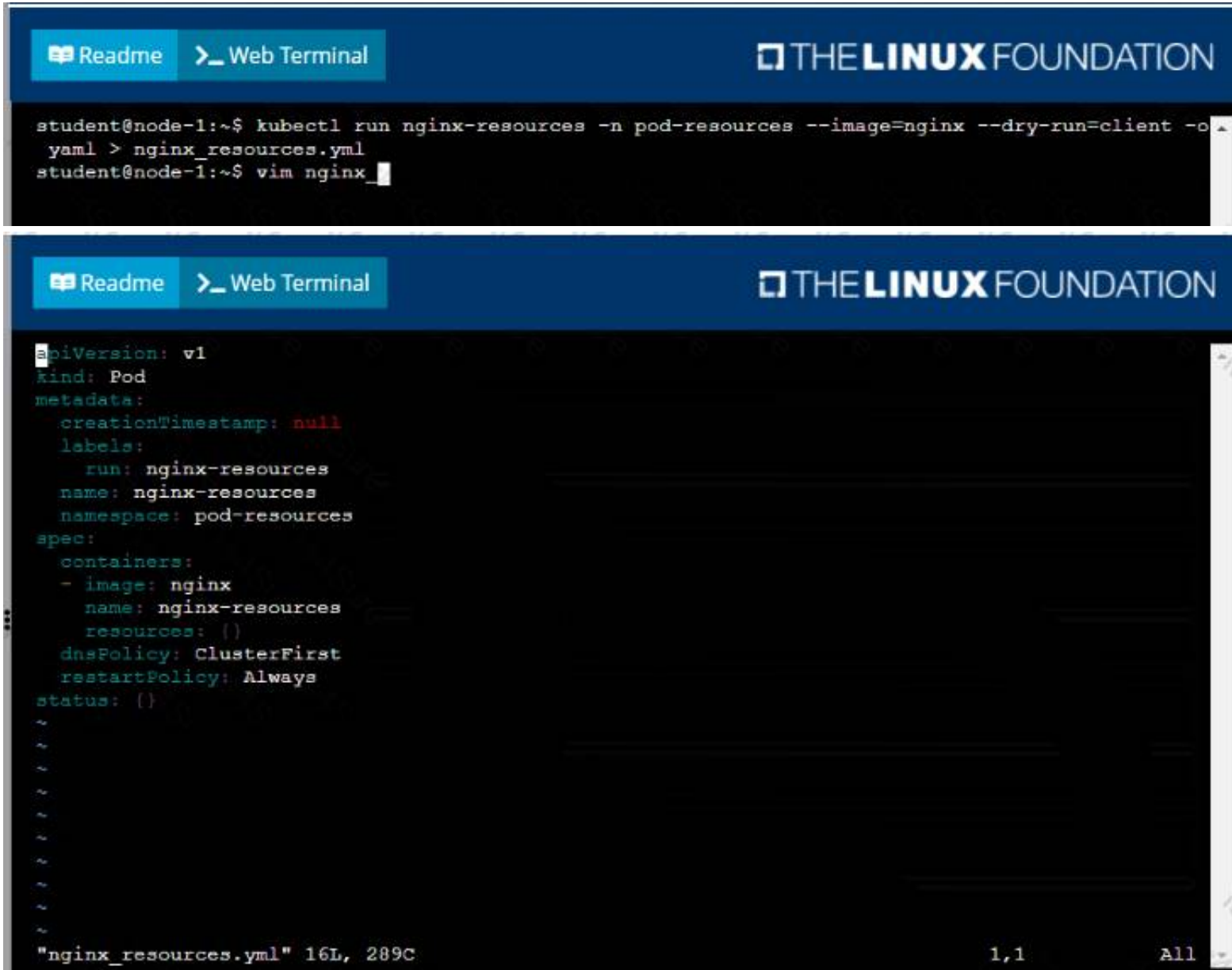
- Create a pod named nginx-resources in the pod-resources namespace that requests a minimum of 200m CPU and 1Gi memory for its container
- The pod should use the nginx image
- The pod-resources namespace has already been created

A. Mastered
B. Not Mastered

Answer: A

Explanation:

Solution:



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```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: nginx-resources
    name: nginx-resources
    namespace: pod-resources
spec:
  containers:
  - image: nginx
    name: nginx-resources
    resources:
      requests:
        cpu: 200m
        memory: "1Gi"
```

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```
student@node-1:~$ kubectl 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:~$ kubectl create -g nginx_resources.yml
Error: unknown shorthand flag: 'g' in -g
See 'kubectl create --help' for usage.
student@node-1:~$ kubectl create -f nginx_resources.yml
pod/nginx-resources created
student@node-1:~$ kubectl get pods -n pod-re
```

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

NEW QUESTION 3
Exhibit:



Task
A deployment is falling on the cluster due to an incorrect image being specified. Locate the deployment, and fix the problem.
Pending

A. Mastered
B. Not Mastered

Answer: A

Explanation:
Suggest the Solution.

NEW QUESTION 4
Exhibit:

Set configuration context:

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

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:

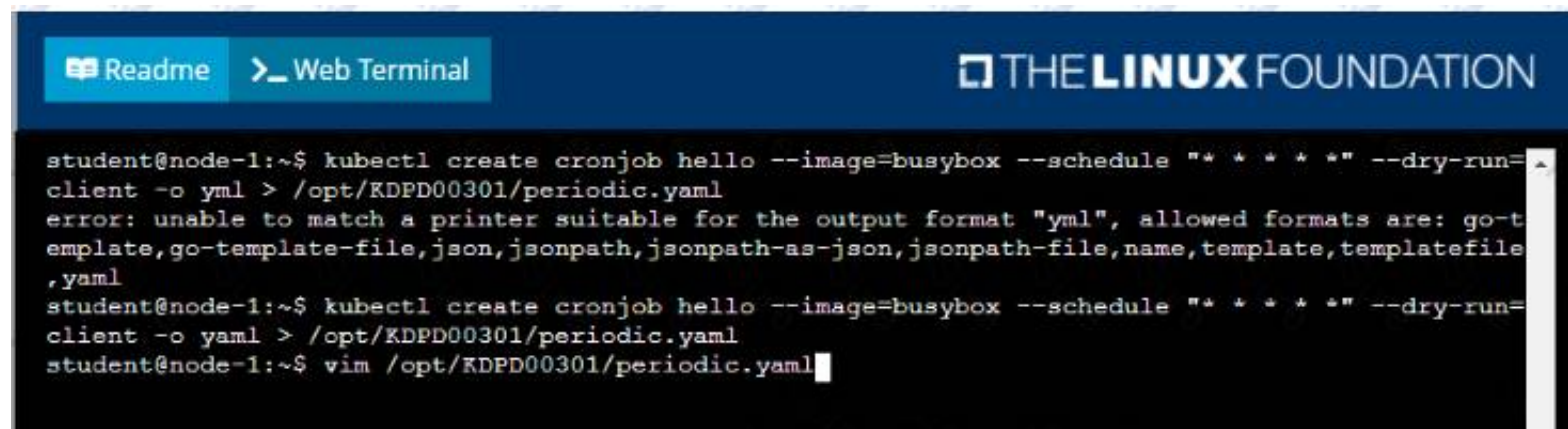
- Create a YAML formatted Kubernetes manifest /opt/KDPD00301/periodic.yaml that runs the following shell command: date in a single busybox container. The command should run every minute and must complete within 22 seconds or be terminated by Kubernetes. The Cronjob name and container name should both be hello
- Create the resource in the above manifest and verify that the job executes successfully at least once

- A. Mastered
- B. Not Mastered

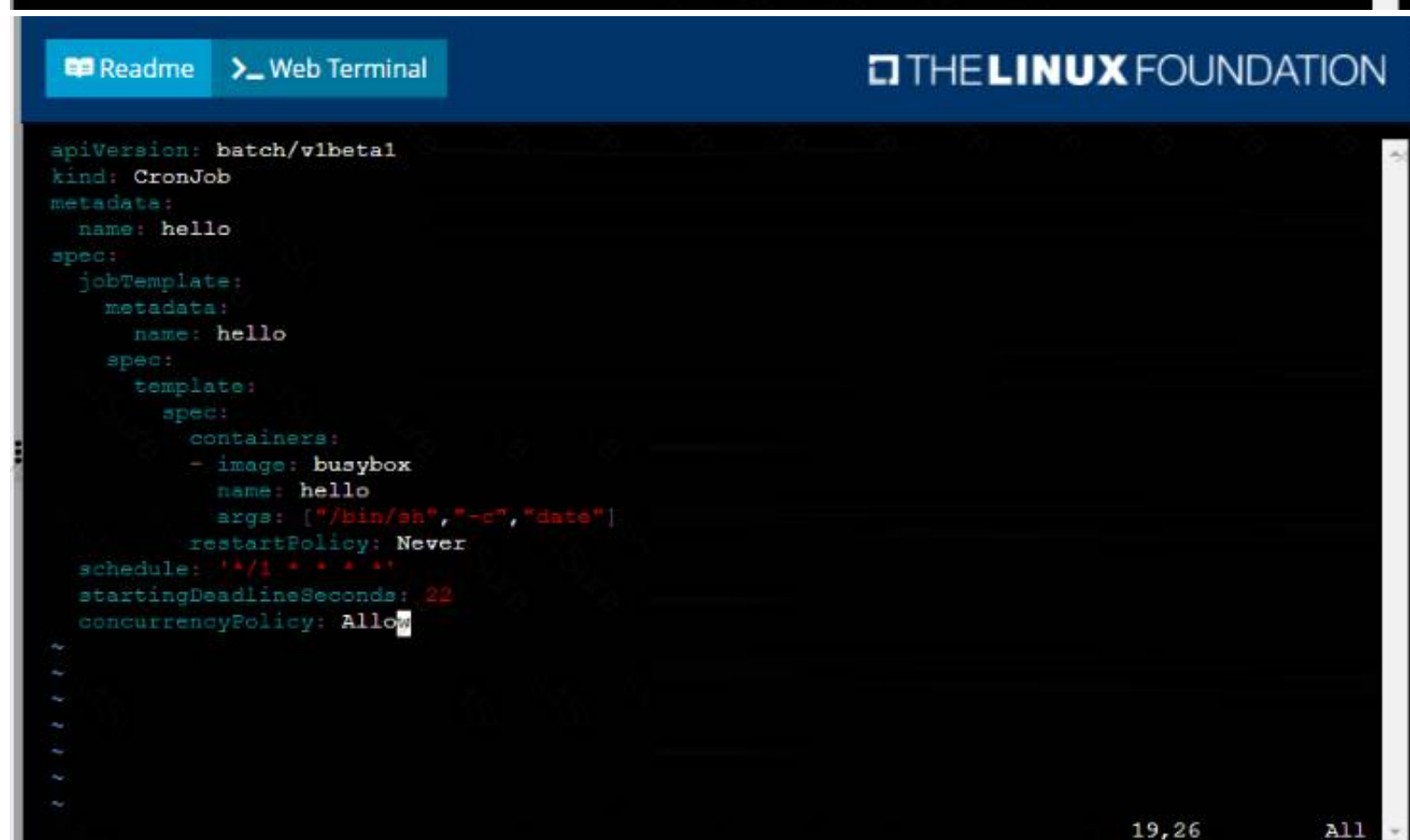
Answer: A

Explanation:

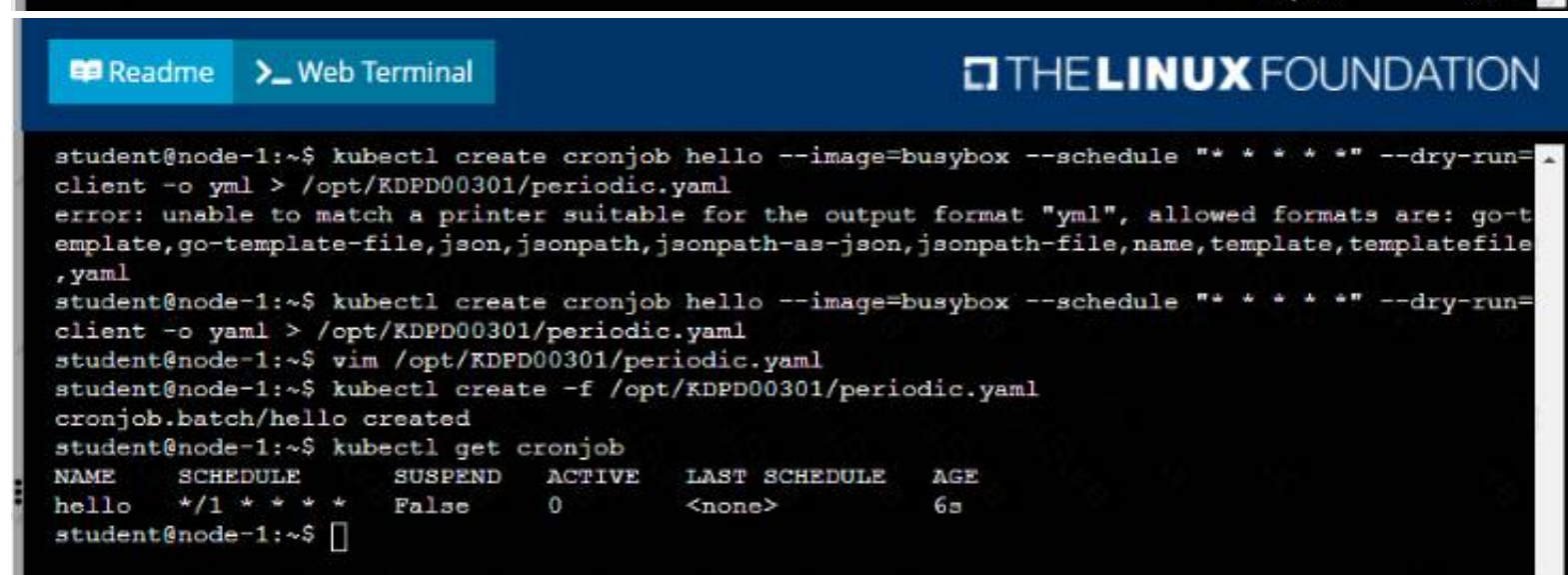
Solution:



```
student@node-1:~$ kubectl create cronjob hello --image=busybox --schedule "*" * * * *" --dry-run=
client -o yaml > /opt/KDPD00301/periodic.yaml
error: unable to match a printer suitable for the output format "yaml", allowed formats are: go-t
emplate, 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
```



```
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: '*/* * * * *
          startingDeadlineSeconds: 22
          concurrencyPolicy: Allow
```



```
student@node-1:~$ kubectl create cronjob hello --image=busybox --schedule "*" * * * * --dry-run=
client -o yaml > /opt/KDPD00301/periodic.yaml
error: unable to match a printer suitable for the output format "yaml", allowed formats are: go-t
emplate, 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:~$
```

NEW QUESTION 5

Exhibit:



Context

You have been tasked with scaling an existing deployment for availability, and creating a service to expose the deployment within your infrastructure. Task Start with the deployment named kdsn00101-deployment which has already been deployed to the namespace kdsn00101 . Edit it to:

- Add the func=webFrontEndkey/value label to the pod template metadata to identify the pod for the service definition
- Have 4 replicas

Next, create ana deploy in namespace kdsn00101 a service that accomplishes the following:

- Exposes the service on TCP port 8080
- is mapped to me pods defined by the specification of kdsn00101-deployment
- Is of type NodePort
- Has a name of cherry

- A. Mastered
- B. Not Mastered

Answer: A

Explanation:

Solution:

```
student@node-1:~$ kubectl edit deployment kdsn00101-deployment -n kdsn00101
```

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Please edit the object below. Lines beginning with a '#' will be ignored, and an empty file will abort the edit. If an error occurs while saving this file will be reopened with the relevant failures.

```

#
apiVersion: apps/v1
kind: Deployment
metadata:
  annotations:
    deployment.kubernetes.io/revision: "1"
  creationTimestamp: "2020-10-09T08:50:39Z"
  generation: 1
  labels:
    app: nginx
  name: kdsn00101-deployment
  namespace: kdsn00101
  resourceVersion: "4786"
  selfLink: /apis/apps/v1/namespaces/kdsn00101/deployments/kdsn00101-deployment
  uid: 8d3ace00-7761-4189-ba10-fbc676c311bf
spec:
  progressDeadlineSeconds: 600
  replicas: 1
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    type: RollingUpdate
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - image: nginx
        name: nginx
        ports:
        - containerPort: 80
        resources: {}
      restartPolicy: Always


```

"/tmp/kubectl-edit-d4y5r.yaml" 70L, 1957C

1,1

Top

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```

uid: 8d3ace00-7761-4189-ba10-fbc676c311bf
spec:
  progressDeadlineSeconds: 600
  replicas: 4
  revisionHistoryLimit: 10
  selector:
    matchLabels:
      app: nginx
  strategy:
    rollingUpdate:
      maxSurge: 25%
      maxUnavailable: 25%
    type: RollingUpdate
  template:
    metadata:
      creationTimestamp: null
      labels:
        app: nginx
        func: webFrontEnd
    spec:
      containers:
      - image: nginx:latest
        imagePullPolicy: Always
        name: nginx
        ports:
        - containerPort: 80
:

```

```

student@node-1:~$ kubectl edit deployment kdsn00101-deployment -n kdsn00101
deployment.apps/kdsn00101-deployment edited
student@node-1:~$ kubectl get deployment kdsn00101-deployment -n kdsn00101
NAME                                READY    UP-TO-DATE    AVAILABLE    AGE
kdsn00101-deployment                4/4      4              4            7h17m
student@node-1:~$ kubectl expose deployment kdsn00101-deployment -n kdsn00101 --type NodePort --
port 8080 --name cherry
service/cherry exposed

```

NEW QUESTION 10

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