Exercise 4.3: Designing Applications With Duration: Create a CronJob

A `CronJob` creates a watch loop which will create a batch job on your behalf when the time becomes true. We will use our existing `Job` file to start.

1. Copy the `Job` file to a new file.

   ```
   student@ckad-1:~$ cp job.yaml cronjob.yaml
   ```

2. Edit the file to look like the annotated file shown below.

   ```
   student@ckad-1:~$ vim cronjob.yaml
   ```

   cronjob.yaml

   ```
    1  apiVersion: batch/v1beta1    #<-- Add beta1 to be v1beta1
    2  kind: CronJob    #<-- Change this line
    3  metadata:
    4    name: sleepy
    5  spec:                          #<-- Remove completions:, parallelism:, and activeDeadlineSeconds:
    6    schedule: "*/2 * * * *"      #<-- Add Linux style cronjob syntax
    7    jobTemplate:                 #<-- New jobTemplate and spec
    8      spec:
    9        template:    #<-- This and following lines space four to right
   10          spec:
   11            containers:
   12            - name: resting
   13              image: busybox
   14              command: ["/bin/sleep"]
   15              args: ["3"]
   16            restartPolicy: Never
   ```

3. Create the new `CronJob`. View the jobs. It will take two minutes for the `CronJob` to run and generate a new batch `Job`.

   ```
   student@ckad-1:~$ kubectl create -f cronjob.yaml

   cronjob.batch/sleepy created

   student@ckad-1:~$ kubectl get cronjobs.batch

   NAME     SCHEDULE      SUSPEND   ACTIVE   LAST SCHEDULE   AGE
   sleepy   */2 * * * *   False     0        <none>          8s

   student@ckad-1:~$ kubectl get job

   No resources found in default namespace.
   ```

4. After two minutes you should see jobs start to run.

   ```
   student@ckad-1:~$ kubectl get cronjobs.batch

   NAME     SCHEDULE      SUSPEND   ACTIVE   LAST SCHEDULE   AGE
   sleepy   */2 * * * *   False     0        21s             2m1s
   ```

```
student@ckad-1:~$ kubectl get jobs.batch

NAME                    COMPLETIONS    DURATION    AGE
sleepy-1539722040       1/1            5s          18s


student@ckad-1:~$ kubectl get jobs.batch

NAME                    COMPLETIONS    DURATION    AGE
sleepy-1539722040       1/1            5s          5m17s
sleepy-1539722160       1/1            6s          3m17s
sleepy-1539722280       1/1            6s          77s
```

5. Ensure that if the job continues for more than 10 seconds it is terminated. We will first edit the **sleep** command to run for 30 seconds then add the `activeDeadlineSeconds:` entry to the container.

```
student@ckad-1:~$ vim cronjob.yaml
```

cronjob.yaml

```
1   ....
2     jobTemplate:
3       spec:
4         template:
5           spec:
6             activeDeadlineSeconds: 10   #<-- Add this line
7             containers:
8             - name: resting
9   ....
10              command: ["/bin/sleep"]
11              args: ["30"]              #<-- Edit this line
12            restartPolicy: Never
```

6. Delete and recreate the `CronJob`. It may take a couple of minutes for the batch `Job` to be created and terminate due to the timer.

```
student@ckad-1:~$ kubectl delete cronjobs.batch sleepy

cronjob.batch "sleepy" deleted


student@ckad-1:~$ kubectl create -f cronjob.yaml

cronjob.batch/sleepy created


student@ckad-1:~$ sleep 120 ; kubectl get jobs

NAME                    COMPLETIONS    DURATION    AGE
sleepy-1539723240       0/1            61s         61s


student@ckad-1:~$ kubectl get cronjobs.batch

NAME      SCHEDULE      SUSPEND    ACTIVE    LAST SCHEDULE    AGE
sleepy    */2 * * * *   False      1         72s              94s


student@ckad-1:~$ kubectl get jobs

NAME                    COMPLETIONS    DURATION    AGE
sleepy-1539723240       0/1            75s         75s


student@ckad-1:~$ kubectl get jobs
```

```
NAME                  COMPLETIONS   DURATION   AGE
sleepy-1539723240     0/1           2m19s      2m19s
sleepy-1539723360     0/1           19s        19s


student@ckad-1:~$ kubectl get cronjobs.batch

NAME      SCHEDULE      SUSPEND   ACTIVE   LAST SCHEDULE   AGE
sleepy    */2 * * * *   False     2        31s             2m53s
```

7. Clean up by deleting the `CronJob`.

```
student@ckad-1:~$  kubectl delete cronjobs.batch sleepy

cronjob.batch "sleepy" deleted
```