# Jobs & CronJobs

This lab consists of a list of exercises to demonstrate and understand the most commonly used kubernetes commands and concepts to ramp up your kubernetes competency skills in the area of `Jobs` and `CronJobs`

## Learning Outcomes

After completing the lab, you will be able to understand and use Kubernetes concepts related to the below topics:

1. Jobs
2. CronJobs

## Start the minikube

1. Start minikube locally `minikube start --driver=virtualbox`
2. Verify the kubectl context `kubectl config get-contexts` is set to minikube. If not, set it to minikube `kubectl config use-context minikube`

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Create all manifest resources in the directory `~/workspace/kubernetes-manifests/competencies` . Watch out for the right file names in the solution section.

## Jobs and CronJobs

1. Create a job to print current date and time

   ▼ Click to see solution

   `~/workspace/kubernetes-manifests/competencies/jobs/job-1.yaml`

   ```
   apiVersion: batch/v1
   kind: Job
   metadata:
   ```

```
  labels:
    run: busybox
  name: busybox
spec:
  template:
    spec:
      containers:
      - image: busybox
        name: busybox
        imagePullPolicy: IfNotPresent
        command: ["/bin/sh"]
        args: ["-c","date"]
      restartPolicy: OnFailure
```

```
kubectl apply -f ~/workspace/kubernetes-manifests/competencies/jobs/job-1.yaml
kubectl get job busybox
kubectl get pods -w
```

```
kubectl logs <job-pod-name>
```

```
kubectl delete job busybox
```

2. Create a job which runs a workload which simulates rolling the dice and returns a zero exit code (i.e. success) when you get a six.

▼ Click to see solution

`~/workspace/kubernetes-manifests/competencies/jobs/job-3.yaml`

```
kind: Job
apiVersion: batch/v1
metadata:
  name: job-3
spec:
```

```
  completions: 1
  parallelism: 1
  template:
    metadata:
      name: job-3
    spec:
      restartPolicy: Never
      containers:
        - name: job-3
          image: alpine
          imagePullPolicy: IfNotPresent
          command: ["/bin/sh"]
          args: ["-c", "if [ \"$(shuf -i 1-6 -n 1)\" = \"6\" ]; then exit 0; els
e exit 1; fi"]
```

```
kubectl apply -f ~/workspace/kubernetes-manifests/competencies/jobs/job-3.yaml
kubectl get job job-3
```

```
kubectl delete job job-3
```

3. Create a cron job to print current date and time every minute

▼ Click to see solution

`~/workspace/kubernetes-manifests/competencies/jobs/job-5.yaml`

```
apiVersion: batch/v1beta1
kind: CronJob
metadata:
  name: job-5
spec:
  jobTemplate:
    metadata:
      name: job-5
    spec:
```

```
      template:
        metadata:
        spec:
          containers:
          - image: busybox
            name: job-5
            imagePullPolicy: IfNotPresent
            command: ["/bin/sh"]
            args: ["-c","date"]
          restartPolicy: OnFailure
  schedule: '*/1 * * * *'
```

```
kubectl apply -f ~/workspace/kubernetes-manifests/competencies/jobs/job-5.yaml
kubectl get cronjob job-5
kubectl get pods
```

```
kubectl logs <pod-name>
```

```
kubectl delete cronjob job-5
```

4. Create a cron job to print "Time: 3.30 pm. It is break time. Lets stretch out a bit or have a coffee!" at 3.30pm today

▼ Click to see solution

`~/workspace/kubernetes-manifests/competencies/jobs/job-6.yaml`

```
apiVersion: batch/v1beta1
kind: CronJob
metadata:
  name: job-6
spec:
  jobTemplate:
    metadata:
      name: job-6
```

```
    spec:
      template:
        metadata:
        spec:
          volumes:
            - name: tz-config
              hostPath:
                path: /usr/share/zoneinfo/Europe/Moscow
          containers:
          - image: busybox
            name: job-6
            imagePullPolicy: IfNotPresent
            command: ["/bin/sh"]
            args: ["-c","echo Time: 3.30 pm. It is break time. Lets stretch out
 a bit or have a coffee!"]
            volumeMounts:
              - name: tz-config
                mountPath: /etc/localtime
          restartPolicy: OnFailure
  schedule: '30 15 * * *'
```

```
kubectl apply -f ~/workspace/kubernetes-manifests/competencies/jobs/job-6.yaml
kubectl get cj job-6
kubectl get pods
```

```
kubectl logs <pod-name>
```

```
kubectl delete cronjob job-6
```