

Lesson 03 Demo 12

Creating Jobs

Objective: To create jobs in Kubernetes for efficient task management within the cluster

Tools required: kubeadm, kubectl, kubelet, and containerd

Prerequisites: A Kubernetes cluster (refer to Demo 01 from Lesson 01 for setting up a cluster)

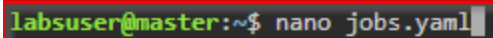
Steps to be followed:

1. Configure and set up the pod files

Step 1: Configure and set up the pod files

- 1.1 Create a YAML file using the following command:

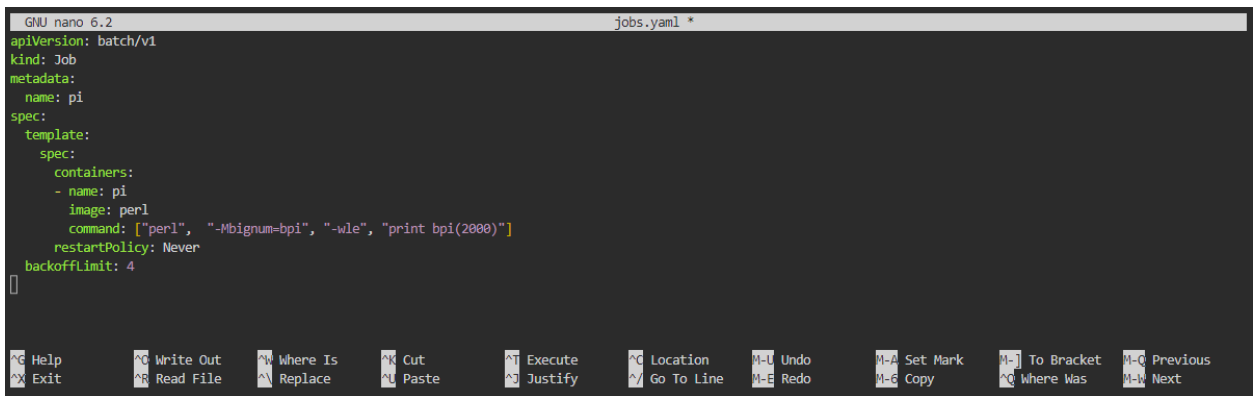
nano jobs.yaml



```
labsuser@master:~$ nano jobs.yaml
```

1.2 Add the following code in the **jobs.yaml** file to create the pod:

```
apiVersion: batch/v1
kind: Job
metadata:
  name: pi
spec:
  template:
    spec:
      containers:
      - name: pi
        image: perl
        command: ["perl", "-Mbignum=bpi", "-wle", "print bpi(2000)"]
      restartPolicy: Never
  backoffLimit: 4
```

A screenshot of the GNU nano 6.2 text editor. The title bar shows "GNU nano 6.2" and "jobs.yaml *". The editor contains the following YAML code:

```
apiVersion: batch/v1
kind: Job
metadata:
  name: pi
spec:
  template:
    spec:
      containers:
      - name: pi
        image: perl
        command: ["perl", "-Mbignum=bpi", "-wle", "print bpi(2000)"]
      restartPolicy: Never
  backoffLimit: 4
```

The bottom status bar shows various keyboard shortcuts for editing and navigation.

Note: Press the **ctrl + o** keys to write and then press the **enter** key

A screenshot of the GNU nano 6.2 text editor, similar to the previous one, but with the "File Name to Write: jobs.yaml" prompt at the bottom. The editor content is the same as the previous screenshot. The bottom status bar shows additional keyboard shortcuts for file operations like "DOS Format", "Mac Format", "Append", "Prepend", "Backup File", and "Browse".

Press the **ctrl + x** keys to exit the editor

1.3 Use the **cat** command to validate the content of the **jobs.yaml** file

```
labsuser@master:~$ nano jobs.yaml
labsuser@master:~$ cat jobs.yaml
apiVersion: batch/v1
kind: Job
metadata:
  name: pi
spec:
  template:
    spec:
      containers:
      - name: pi
        image: perl
        command: ["perl", "-Mbignum=bpi", "-wle", "print bpi(2000)"]
        restartPolicy: Never
      backoffLimit: 4
labsuser@master:~$
```

1.4 Create the job resource using the following command:

kubectl create -f jobs.yaml

```
labsuser@master:~$ nano jobs.yaml
labsuser@master:~$ cat jobs.yaml
apiVersion: batch/v1
kind: Job
metadata:
  name: pi
spec:
  template:
    spec:
      containers:
      - name: pi
        image: perl
        command: ["perl", "-Mbignum=bpi", "-wle", "print bpi(2000)"]
        restartPolicy: Never
      backoffLimit: 4
labsuser@master:~$ kubectl create -f jobs.yaml
job.batch/pi created
labsuser@master:~$
```

1.5 Verify the pod you created using the following command:

kubectl get pods

```
name: pi
spec:
  template:
    spec:
      containers:
      - name: pi
        image: perl
        command: ["perl", "-Mbignum=bpi", "-wle", "print bpi(2000)"]
        restartPolicy: Never
      backoffLimit: 4
labsuser@master:~$ kubectl create -f jobs.yaml
job.batch/pi created
labsuser@master:~$ kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
apache2	1/1	Running	1 (147m ago)	4h7m
apache3	1/1	Running	1 (147m ago)	3h58m
mypod1	1/1	Running	0	132m
mypod2	1/1	Running	0	127m
pi-8bmjj	0/1	Completed	0	3m2s

```
labsuser@master:~$
```

1.6 Copy the name of the pod

```
name: pi
spec:
  template:
    spec:
      containers:
      - name: pi
        image: perl
        command: ["perl", "-Mbignum=bpi", "-wle", "print bpi(2000)"]
        restartPolicy: Never
      backoffLimit: 4
labsuser@master:~$ kubectl create -f jobs.yaml
job.batch/pi created
labsuser@master:~$ kubectl get pods
```

NAME	READY	STATUS	RESTARTS	AGE
apache2	1/1	Running	1 (147m ago)	4h7m
apache3	1/1	Running	1 (147m ago)	3h58m
mypod1	1/1	Running	0	132m
mypod2	1/1	Running	0	127m
pi-8bmjj	0/1	Completed	0	3m2s

```
labsuser@master:~$
```

1.7 Verify the logs using the following command, replacing **<Filename>** with the pod's name:

kubectl logs <Filename>

```
NAME      READY   STATUS    RESTARTS   AGE
apache2   1/1     Running   1 (147m ago)  4h7m
apache3   1/1     Running   1 (147m ago)  3h58m
mypod1    1/1     Running   0           132m
mypod2    1/1     Running   0           127m
pi-8bmjj  0/1     Completed 0           3m2s

labsuser@master:~$ kubectl logs pi-8bmjj
3...141592653589793238462643383279502884197169399375105820974944592307816406286208998628034825342117067982148086513282306647093844609550582231725359408128481117450284102701
93852110555964462294895493038196442881097566593344612847564823378678316527120190914564856692346034861045432664821339360726024914127372458700660631558817488152092096282925
40917153643678925903600113305305488204665213841469519415116094330572703657595919530921861173819326117931051185480744623799627495673518857527248912279381830119491298336733
62440656643086021394946395224737190702179860943702770539217176293176752384674818467669405132000568127145263560827785771342757789609173637178721468440901224953430146549585
37105079227968925892354201995611212902196086403441815981362977477130996051870721134999999837297804995105973173281609631859502445945534690830264252230825334468503526193118
81710100031378387528865875332083814206171776691473035982534904287554687311595628638823537875937519577818577805321712268066130019278766111959092164201989380952572010654858
63278865936153381827968230301952035301852968995773622599413891240721775283470131515574857242454150695950829533116861727855889075098381754637464939319255060400927701671139
00984882401285836160356370766010471018194295559619894676783744944825537977472684710404753464620804668425906949129331367702898915210475216205696602405803815019351125338243
00355876402474964732639141992726042699227967823547816360093417216412199245863150302861829745557067498385054945885869269956909272107975093029553211653449872027559602364806
6549911988183479775356636980742654252786255181841757467289097777279380008164706001614524919217321721477235014144197356854816136115735255213347541849468438523323907394143
33454776241686251898356948556209921922218427255025425688767179049460165346680498862723279178608578438382796797668145410095388378636095068006422512520511739298489608412848
86269456042419652850222106611863067442786220391949450471237137869609563643719172874677646575739624138908658326459958133904780275901
labsuser@master:~$
```

By following these steps, you have successfully configured and created jobs, enhancing your ability to automate and manage tasks effectively in a Kubernetes environment.