

Lesson 04 Demo 12

Creating Jobs

Objective: To demonstrate the creation of jobs in Kubernetes, allowing for efficient task management within the cluster

Tools required: kubeadm, kubectl, kubelet, and containerd

Prerequisites: A Kubernetes cluster should already be set up (refer to the steps provided in Lesson 02, Demo 01 for guidance).

Steps to be followed:

1. Configure and set up the pod files

Step 1: Configure and set up the pod files

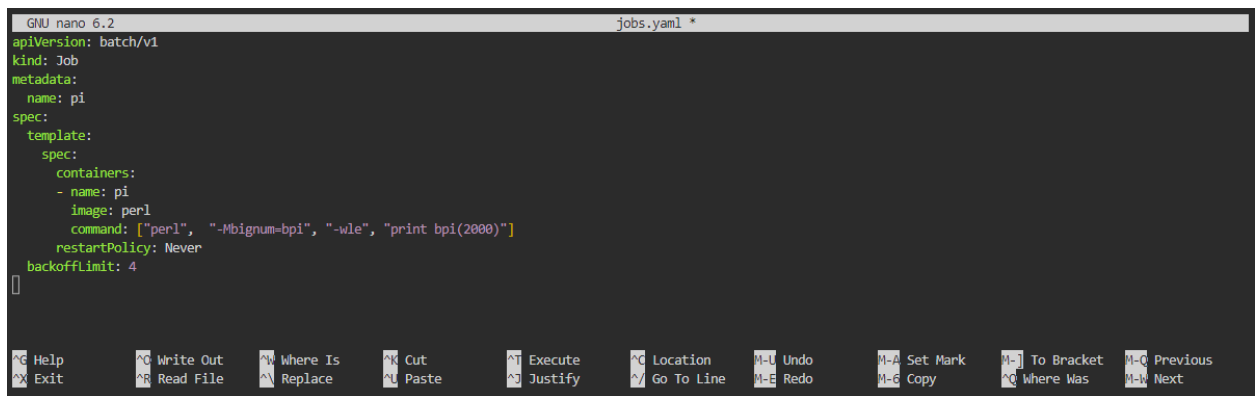
1.1 Create a YAML file by using the following command:

nano jobs.yaml

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

1.2 Add the following code in **jobs.yaml** 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
```



```
GNU nano 6.2 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
^C Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   ^U Undo       ^A Set Mark   ^J To Bracket ^Q Previous
^X Exit      ^R Read File  ^\ Replace    ^V Paste      ^_ Justify    ^/_ Go To Line ^E Redo       ^G Copy       ^_ Where Was  ^W Next
```

1.3 Press the **ctrl + o** keys to write, and then press the **enter** key; press the **ctrl + x** keys to exit the editor.



```
GNU nano 6.2 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
File Name to Write: jobs.yaml
^C Help      ^D DOS Format  ^A Append     ^B Backup File
^X Cancel    ^M Mac Format  ^P Prepend    ^T Browse
```

1.4 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:~$
```

1.5 Create the job resource by using the following command:

kubect1 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:~$ kubect1 create -f jobs.yaml
job.batch/pi created
labsuser@master:~$
```

1.6 Verify the pod you created by 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:~$
```

1.7 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:~$
```

1.8 Replace <Filename> with the pod's name and verify the logs by using the following command, as shown in the screenshot below:

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
3.141592653589793238462643383279502884197169399375105820974944592307816406286208998628034825342117067982148086513282306647093844609550582231725359408128481117450284102781
93852110555964462294895493038196442881097566593344612847564823378678316527120100914564856692346034861045432664821339360726024914127372458700660631558817488152092096282925
40917153643678925903600113305305488204665213841469519415116094330572703657595919530921861173819326117931051185480744623799627495673518857527248912279381830119491298336733
62440656643086021394946395224737190702179860943702770539217176293176752384674818467669405132000568127145263560827785771342757789609173637178721468440901224953430146549585
37105079227968925892354201995611212902196886403441815981362977477130996051870721134999999837297804995105973173281609631859502445945534690830264252230825334468503526193118
81710100031378387528865875332083814206171776691473035982534904287554687311595628638823537875937519577818577805321712268066130019278766111959092164201989380952572010654858
63278865936153381827968230301952035301852968995773622599413891249721775283479131515574857242454150695950829533116861727855889075098381754637464939319255060400927701671139
00984882401285836160356370766010471018194295559619894676783744944825537977472684710404753464620804668425906949129331367702898915210475216205696602405803815019351125338243
00355876402474964732639141992726042699227967823547816360093417216412199245863150302861829745557067498385054945885869269956909272107975093029553211653449872027559602364806
65499119881834797753566369807426542527862551818417574672890977772793800081647060016145249192173217214772350141441973568548161361157352552133475741849468438523323907394143
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.