

## Step 1 - Creating a configuration file for a Pod that has two labels

Environment: production

app: nginx

### Create a YAML File adding the Labels

vi pod-label.yaml

```
apiVersion: v1
kind: Pod
metadata:
  name: label-demo
  labels:
    environment: production
    app: nginx
spec:
  containers:
  - name: nginx
    image: nginx
  ports:
  - containerPort: 80
```

kubectl create -f pod-label.yaml

```
[SJCMA17JJHD4:Downloads lcastro$ vi pod-label.yaml
[SJCMA17JJHD4:Downloads lcastro$ kubectl create -f pod-label.yaml
pod/label-demo created
```

kubectl get pods

kubectl get pods -o wide

```
[SJCMA17JJHD4:Downloads lcastro$ kubectl get pods
NAME          READY   STATUS    RESTARTS   AGE
label-demo    1/1     Running   0           3m24s
[SJCMA17JJHD4:Downloads lcastro$ kubectl get pods -o wide
NAME          READY   STATUS    RESTARTS   AGE   IP           NODE       NOMINATED NODE   READINESS GATES
label-demo    1/1     Running   0           3m27s  172.17.0.10  minikube   <none>           <none>
```

### Validate pods with the labels defined above

kubectl get pods -l environment=production,app=nginx

```
[SJCMA17JJHD4:Downloads lcastro$ kubectl get pods -l environment=production,app=nginx
NAME          READY   STATUS    RESTARTS   AGE   IP           NODE       NOMINATED NODE   READINESS GATES
label-demo    1/1     Running   0           4m15s  10.0.0.1     t2.medium
```

## Step 2 - Deploy a Pod in a specific Node based on a Label selector

## Create a Label for Node Worker-2 of Disktype=ssd

```
kubectl label nodes worker-2 disktype=ssd
```

```

root@kubernetes-master:/home/ubuntu# kubectl get nodes
NAME                                STATUS    ROLES    AGE     VERSION
ip-10-1-0-12                        NotReady <none> 22h     v1.18.1
kubernetes-master                   Ready    master   23h     v1.18.1
worker-2                             Ready    node     22h     v1.18.1

root@kubernetes-master:/home/ubuntu# kubectl get nodes -o wide
NAME                                STATUS    ROLES    AGE     VERSION    INTERNAL-IP    EXTERNAL-IP    OS-IMAGE             KERNEL-VERSION    CONTAINER-RUNTIME
ip-10-1-0-12                        NotReady <none> 22h     v1.18.1    10.1.0.12     <none>         Ubuntu 18.04.3 LTS   4.15.0-1857-aws  docker://19.3.8
kubernetes-master                   Ready    master   23h     v1.18.1    10.1.0.199    <none>         Ubuntu 18.04.3 LTS   4.15.0-1857-aws  docker://19.3.8
worker-2                             Ready    node     22h     v1.18.1    10.1.0.85     <none>         Ubuntu 18.04.3 LTS   4.15.0-1857-aws  docker://19.3.8

```

```
kubectl get nodes --show-labels
```

```

root@kubernetes-master:~/k8s# kubectl get nodes --show-labels
NAME                                STATUS    ROLES    AGE    VERSION    LABELS
ip-10-1-0-12                       NotReady    
kubernetes-master                  Ready    master   23h    v1.18.1    beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/arch=amd64,kubernetes.io/hostname=ip-10-1-0-12,kubernetes.io/os=linux
kubernetes-master-worker-2         Ready    worker   23h    v1.18.1    beta.kubernetes.io/arch=amd64,beta.kubernetes.io/os=linux,kubernetes.io/arch=amd64,kubernetes.io/hostname=kubernetes-master.kubernetes.io/os=linux,node-role.kubernetes.io/master=,kubernetes.io/hostname=ip-10-1-0-12,kubernetes.io/os=linux,disktype=ssd,kubernetes.io/arch=amd64,kubernetes.io/hostname=worker-2.kubernetes.io/os=linux

```

## Create YAML File

## vi pod-node-selector.yaml

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx
  labels:
    env: test
spec:
  containers:
    - name: nginx
      image: nginx
      imagePullPolicy: IfNotPresent
  nodeSelector:
    disktype: ssd
```

```
kubectl create -f pod-node-selector.yaml
```

### Step 3 - Validate Pod is running in designated Node

```
kubectl get pods -o wide
```

```
root@kubernetes-master:/home/ubuntu# kubectl create -f pod-node-selector.yaml
pod/nginx created
root@kubernetes-master:/home/ubuntu# kubectl get pods -o wide
```

| NAME  | READY | STATUS  | RESTARTS | AGE | IP         | NODE     | NOMINATED NODE | READINESS GATES |
|-------|-------|---------|----------|-----|------------|----------|----------------|-----------------|
| nginx | 1/1   | Running | 0        | 9s  | 10.244.2.5 | worker-2 | <none>         | <none>          |

#### Step 4 - Delete Pod

kubectl delete pods nginx

```
[root@kubernetes-master:/home/ubuntu# kubectl delete pod nginx  
pod "nginx" deleted
```