

Node Scheduling and Affinity

Lab 3: Node Scheduling and Node Affinity

Objective:

- Learn how to schedule Pods on specific nodes using node selectors and affinity rules.

Steps

1. Ensure Nodes Are Labeled

Label the two Worker nodes:

```
kubectl label node minikube-m02 zone=east  
kubectl label node minikube-m03 zone=west
```

2. Create YAML file `busy-east.yaml` Pod with Node Selector: east

```
apiVersion: v1
kind: Pod
metadata:
  name: busy-east
spec:
  nodeSelector:
    zone: east
  containers:
  - name: busybox
    image: busybox:musl
    command: ["sleep", "3600"] # keep container running for 1 hour
```

Apply it:

```
kubectl apply -f busy-east.yaml
```

3. Verify Pod is Running on the Correct Node

```
kubectl get pod -o wide
```

Check that the Pod is scheduled to `minikube-m02`.

4. Create YAML file `busy-affinity.yaml` to deploy a Pod with Affinity

```
apiVersion: v1
kind: Pod
metadata:
  name: busy-affinity
spec:
  affinity:
    nodeAffinity:
      requiredDuringSchedulingIgnoredDuringExecution:
        nodeSelectorTerms:
          - matchExpressions:
              - key: zone
                operator: In
                values:
                  - west
  containers:
    - name: busybox
      image: busybox:musl
      command: ["sleep", "3600"] # keep container running for 1 hour
```

Save as `busy-affinity.yaml` and apply it:

```
kubectl apply -f busy-affinity.yaml
```

5. Check Placement

```
kubectl get pod -o wide
```

`busy-affinity` should run on `minikube-m03`.

6. Clean Up

```
kubectl delete pod busy-east busy-affinity
```