## **Node Selector**

Kubernetes scheduler ensures that the right node is selected by checking the node’s capacity for CPU and RAM and comparing it to the Pod’s resource requests. The scheduler makes sure that, for each of these resource types, the sum of all resource requests by the Pods’ containers is less than the capacity of the node. This mechanism ensures that Pods end up on nodes with spare resources.

However, there are some scenarios when you want your Pods to end up on specific nodes. For example:

* You want your Pod(s) to end up on a machine with the SSD attached to it.
* You want to co-locate Pods on a particular machine(s) from the same availability zone.
* You want to co-locate a Pod from one Service with a Pod from another service on the same node because these Services strongly depend on each other. For example, you may want to place a web server on the same node as the in-memory cache store like Memcached (see the example below).

These scenarios are addressed by a number of primitives in Kubernetes:

**nodeSelector** — This is a simple Pod scheduling feature that allows scheduling a Pod onto a node whose labels match the nodeSelector labels specified by the user.

The basic idea behind the nodeSelector is to allow a Pod to be scheduled only on those nodes that have label(s) identical to the label(s) defined in the nodeSelector . nodeSelector labels are key-value pairs that can be specified inside the PodSpec.

**Check existing labels:**

kubectl get nodes --show-labels

**Add new labels to node:**

Next, select a node to which you want to add a label. Use below command to add label to node.

kubectl label nodes <node-name> <label-key>=<label-value>

ex:

kubectl label nodes ip-172.10.43.76 name=WorkerOne

In order to assign a Pod to the node with the label we just added, you need to specify a nodeSelector field in the PodSpec. You can have a manifest that looks something like this:

apiVersion: v1

kind: Pod

metadata:

name: nginx

labels:

env: prod

spec:

nodeSelector:

name: WorkerOne

containers:

- name: nginx

image: nginx

imagePullPolicy: IfNotPresent