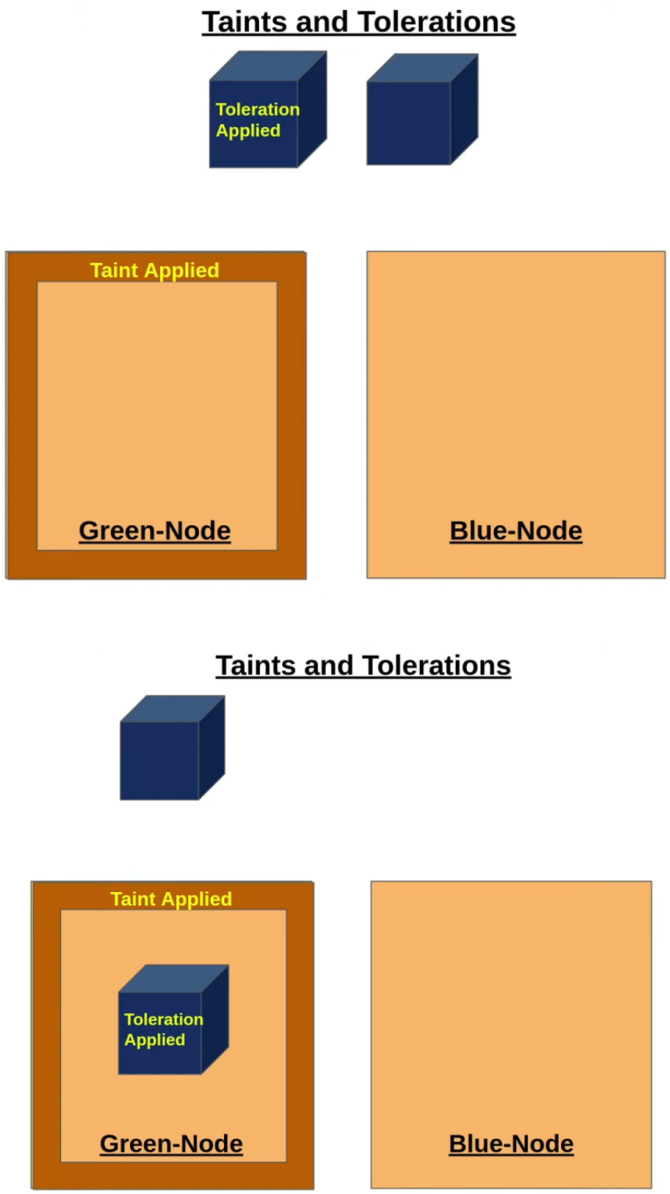
Taint & Toleration

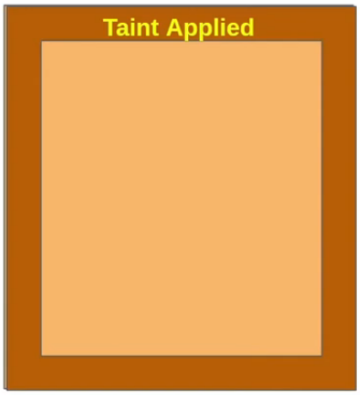
Taints and tolerations are Kubernetes features that allow you to control which pods can be scheduled to run on a node. Taints are labels that you can apply to nodes, and tolerations are labels that pods can express to indicate that they are tolerant of certain taints.



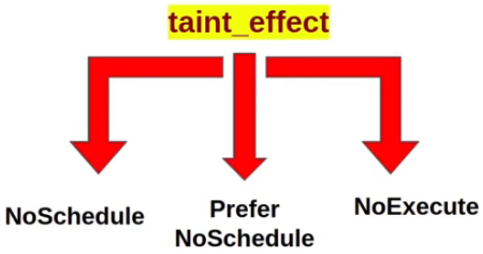
Taints and Tolerations

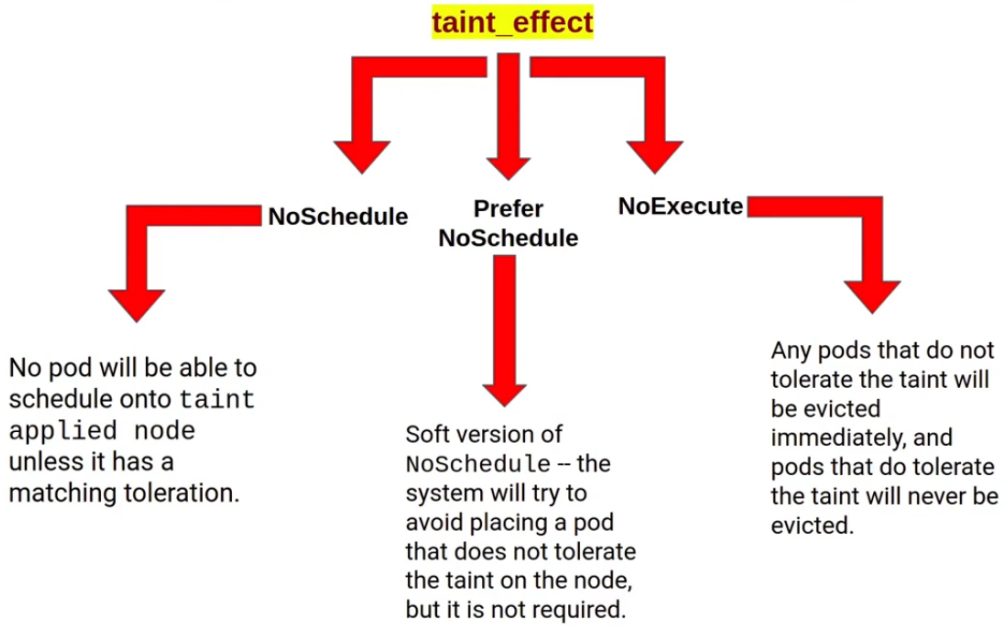
- Taints and tolerations work together to ensure that pods are not scheduled onto inappropriate nodes.
- One or more taints are applied to a node; this marks that the node should not accept any pods that do not tolerate the taints.
- Taints are applied to the nodes and Tolerations are applied to pods

Taints and Tolerations



Kubectl taint nodes node-name key=value:taint_effect





Practical Implementation

How to taint any node ?

```
Kubectl taint nodes node1 key1=value1:NoSchedule
```

How to set toleration on pod ?

```
apiVersion: v1
kind: Pod
metadata:
  name: mypod
spec:
  containers:
  - image: nginx
    name: nginx
  tolerations:
  - key: “key1”
    operator: “equal”
    value : “value1”
    effect: “NoSchedule”
```

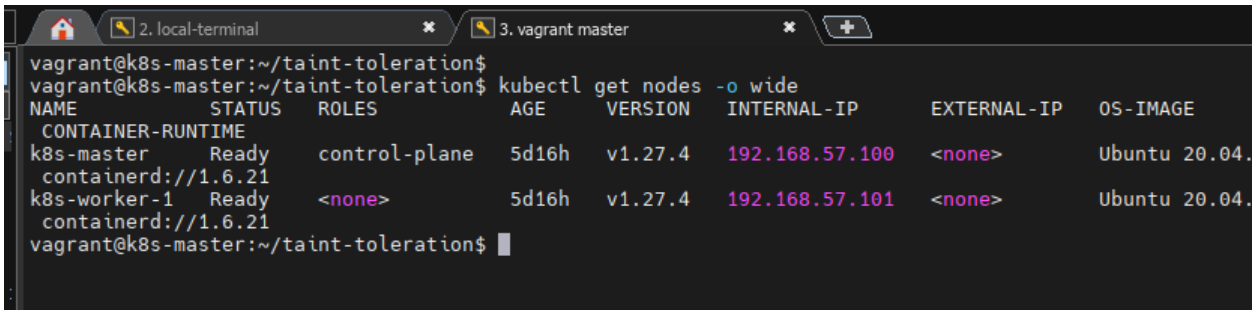
Questions

1. Taint the node with NoSchedule taint effect and apply run: mypod as key, value.
2. Create a pod named test and see in which node it got schedule.
3. Create a pod and add toleration to it.

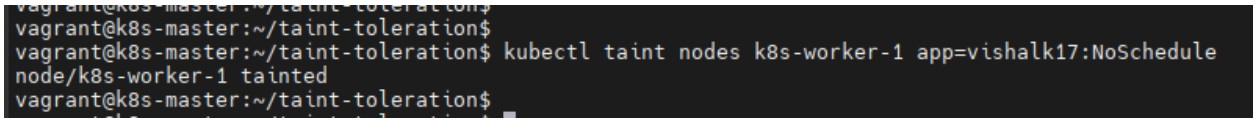
```
key: "key1"
operator: "Equal"
value: "value1"
effect: "NoSchedule
```

4. Remove taint effect from the node.

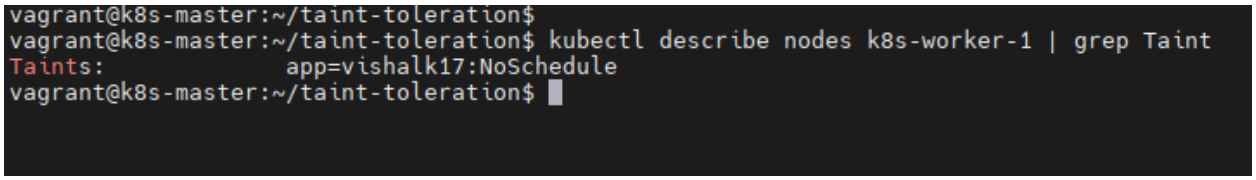
- Check how many nodes we have >?
- kubectl get nodes -o wide



- Lets apply taint on any node
  - I m applying on worker-1 node
  - kubectl taint nodes k8s-worker-1 app=vishalk17:NoSchedule



- Cross verify
- kubectl describe nodes k8s-worker-1 | grep Taint



- Create pod and apply toleration on it
- vi taint-toleration.yml

```
apiVersion: v1
kind: Pod
metadata:
        name: testpod
spec:
        containers:
                - name: vishal-nginx
                  image: nginx:alpine
                  ports:
                          - containerPort: 80
        tolerations:
                - key: app
                  operator: Equal
                  value: vishalk17
                  effect: NoSchedule
```

- Save this file and apply
- kubectl apply -f taint-toleration.yml
- Check where pod has been created
- kubectl describe pod testpod

```
Events:
  Type    Reason     Age   From               Message
  ----    ------     ----  ----               -------
  Normal  Scheduled  10m   default-scheduler  Successfully assigned default/testpod to k8s-worker-1
  Normal  Pulling    10m   kubelet            Pulling image "nginx:alpine"
  Normal  Pulled     10m   kubelet            Successfully pulled image "nginx:alpine" in 16.578137213s (16
waiting)
  Normal  Created    10m   kubelet            Created container vishal-nginx
  Normal  Started    10m   kubelet            Started container vishal-nginx
vagrant@k8s-master:~/taint-toleration$ kubectl describe pod testpod
```

Perfect 🙂

Remove Taint :

Check taint:

kubectl describe nodes k8s-worker-1 | grep Taint

To remove:

kubectl taint nodes k8s-worker-1 app=vishalk17:NoSchedule

```
vagrant@k8s-master:~$ kubectl describe nodes k8s-worker-1 | grep Taint
Taints:             app=vishalk17:NoSchedule
vagrant@k8s-master:~$ kubectl taint nodes k8s-worker-1 app=vishalk17:NoSchedule-
node/k8s-worker-1 untainted
vagrant@k8s-master:~$
```

My devops repo :

- https://github.com/vishalk17/devops

My telegram channel:

- https://t.me/vishalk17_devops

Contact:

Telegram : t.me/vishalk17

vishalk17 My youtube Channel :

- YouTube https://www.youtube.com/@vishalk17