**Deploying Pods**

**Life of a pod**

* Pending : in progress
* Running
* Succeeded : successfully exited
* Failed
* Unknown

Probes

* livenessProbe : Containers are Alive
* readinessProbe : Ready to Serve Traffic

Resource Configs

Each entity created with kubernetes is a resource including pod, service, deployments, replication controller etc. Resources can be defined as YAML or JSON. Here is the syntax to create a YAML specification.

**AKMS** => Resource Configs Specs

1. apiVersion: v1
2. kind:
3. metadata:
4. spec:

Spec Schema: https://kubernetes.io/docs/user-guide/pods/multi-container/

To list supported version of apis

1. kubectl api-versions

**Writing Pod Spec**

Lets now create the Pod config by adding the kind and specs to schme given in the file vote-pod.yaml as follows.

Filename: k8s-code/pods/vote-pod.yaml

1. apiVersion:
2. kind: Pod
3. metadata:
4. spec:

Lets edit this and add the pod specs

Filename: k8s-code/pods/vote-pod.yaml

1. apiVersion: v1
2. kind: Pod
3. metadata:
4. name: vote
5. labels:
6. app: python
7. role: vote
8. version: v1
9. spec:
10. containers:
11. - name: app
12. image: schoolofdevops/vote:v1
13. ports:
14. - containerPort: 80
15. protocol: TCP

[Use this link to refer to pod spec](https://kubernetes.io/docs/reference/generated/kubernetes-api/v1.9/#pod-v1-core)

Launching and operating a Pod

To launch a monitoring screen to see whats being launched, use the following command in a new terminal window where kubectl is configured.

1. watch -n 1 kubectl get pods,deploy,rs,svc

kubectl Syntax:

1. kubectl
2. kubectl apply --help
3. kubectl apply -f FILE

**To Launch pod using configs above,**

1. kubectl apply -f vote-pod.yaml

To view pods

1. kubectl get pods
3. kubectl get po -o wide
5. kubectl get pods vote

**To get detailed info**

1. kubectl describe pods vote

**[Output:]**

1. Name: vote
2. Namespace: default
3. Node: kube-3/192.168.0.80
4. Start Time: Tue, 07 Feb 2017 16:16:40 +0000
5. Labels: app=voting
6. Status: Running
7. IP: 10.40.0.2
8. Controllers: <none>
9. Containers:
10. vote:
11. Container ID: docker://48304b35b9457d627b341e424228a725d05c2ed97cc9970bbff32a1b365d9a5d
12. Image: schoolofdevops/vote:latest
13. Image ID: docker-pullable://schoolofdevops/vote@sha256:3d89bfc1993d4630a58b831a6d44ef73d2be76a7862153e02e7a7c0cf2936731
14. Port: 80/TCP
15. State: Running
16. Started: Tue, 07 Feb 2017 16:16:52 +0000
17. Ready: True
18. Restart Count: 0
19. Volume Mounts:
20. /var/run/secrets/kubernetes.io/serviceaccount from default-token-2n6j1 (ro)
21. Environment Variables: <none>
22. Conditions:
23. Type Status
24. Initialized True
25. Ready True
26. PodScheduled True
27. Volumes:
28. default-token-2n6j1:
29. Type: Secret (a volume populated by a Secret)
30. SecretName: default-token-2n6j1
31. QoS Class: BestEffort
32. Tolerations: <none>
33. Events:
34. FirstSeen LastSeen Count From SubObjectPath Type Reason Message
35. --------- -------- ----- ---- ------------- -------- ------ -------
36. 21s 21s 1 {default-scheduler } Normal Scheduled Successfully assigned vote to kube-3
37. 20s 20s 1 {kubelet kube-3} spec.containers{vote} Normal Pulling pulling image "schoolofdevops/vote:latest"
38. 10s 10s 1 {kubelet kube-3} spec.containers{vote} Normal Pulled Successfully pulled image "schoolofdevops/vote:latest"
39. 9s 9s 1 {kubelet kube-3} spec.containers{vote} Normal Created Created container with docker id 48304b35b945; Security:[seccomp=unconfined]
40. 9s 9s 1 {kubelet kube-3} spec.containers{vote} Normal Started Started container with docker id 48304b35b945

**Commands to operate the pod**

1. kubectl logs vote
3. kubectl exec -it vote sh

**Inside the container in a pod**

1. ifconfig
2. cat /etc/issue
3. hostname
4. cat /proc/cpuinfo
5. ps aux

**Port Forwarding**