Kubernetes101

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$whoami

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Agenda

1. What is Kubernetes?
2. Architecture
3. Key Concepts
4. Key Objects
5. Summary

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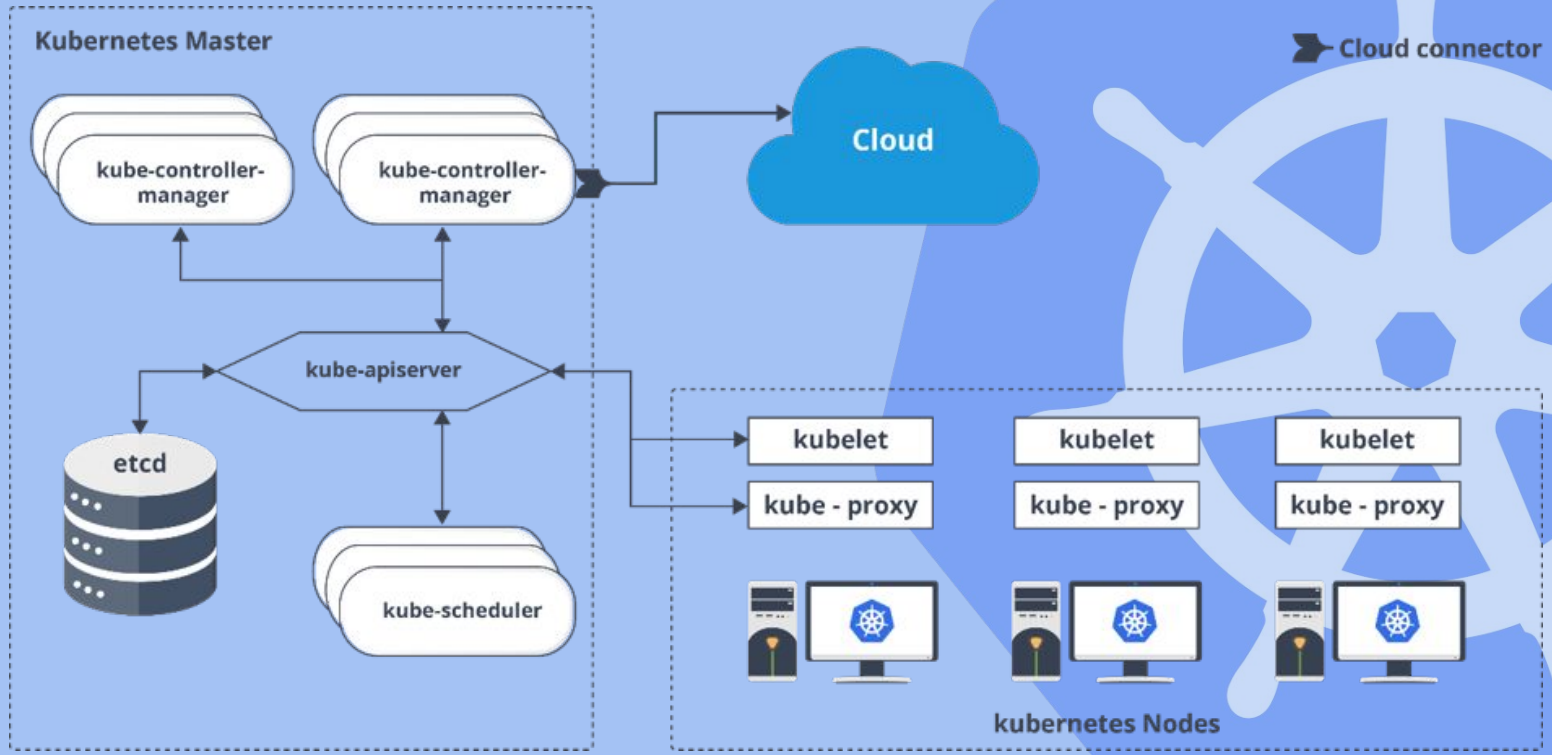
Architecture



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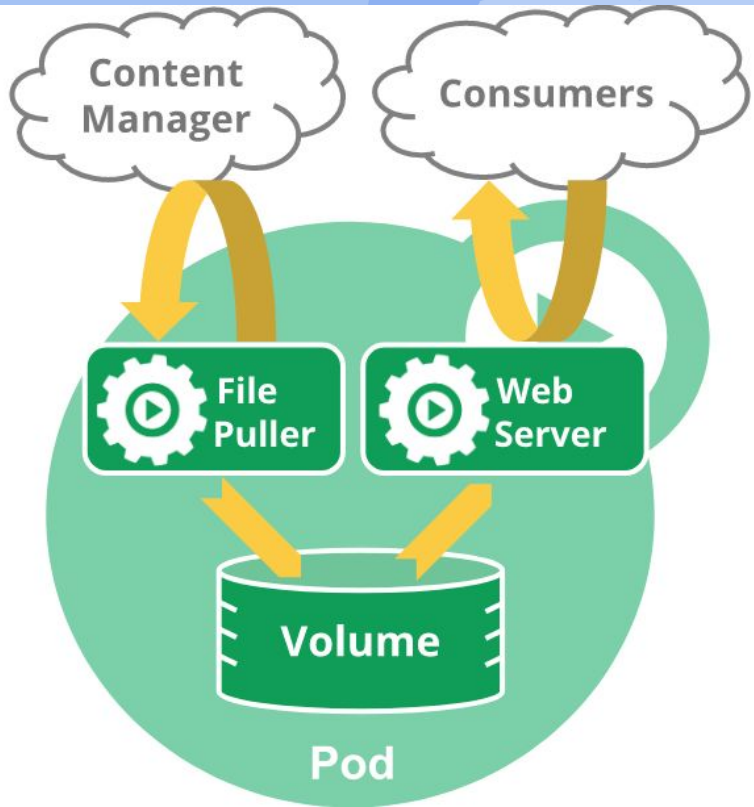
1. Pod

```
apiVersion: v1
kind: Pod
metadata:
  labels:
    run: nginx
  name: nginx
spec:
  containers:
  - image: nginx
    name: nginx
```



2. Labels

Selector

Annotations

Services

Types of Services

1. ClusterIP (Default)
2. NodePort
3. LoadBalancer
4. ExternalName

ClusterIP

1.

NodePort

1.

LoadBalancer

1.

ExternalName

1.

Liveness Probe

```
apiVersion: v1
kind: Pod
metadata:
 name: nginx
spec:
 containers:
 - name: nginx
 image: nginx
 readinessProbe:
 httpGet:
 path: /healthz
 port: 80
 initialDelaySeconds: 100
 periodSeconds: 10
 timeoutSeconds: 4
 failureThreshold: 2
```

Readiness Probes

```
apiVersion: v1
kind: Pod
metadata:
 name: nginx
spec:
 containers:
 - name: nginx
 image: nginx
 livenessProbe:
 httpGet:
 path: /healthz
 port: 80
 initialDelaySeconds: 100
 periodSeconds: 10
 timeoutSeconds: 4
 failureThreshold: 2
```

Deployment

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
spec:
  selector:
    matchLabels:
      app: nginx
  replicas: 2
  template:
    metadata:
      labels:
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx
```

1. DaemonSet

```
apiVersion: apps/v1
kind: DaemonSet
metadata:
  name: fluentd-elasticsearch
  namespace: kube-system
  labels:
    k8s-app: fluentd-logging
spec:
  selector:
    matchLabels:
      name: fluentd-elasticsearch
  template:
    metadata:
      labels:
        name: fluentd-elasticsearch
    spec:
      tolerations:
      # this toleration is to have the daemonset runnable on master nodes
      # remove it if your masters can't run pods
```

Node selector Affinity

1. Taints and toleration

1. Jobs / CronJobs

1. Pv pvcs

1. ConfigMaps

1. Secrets

Thank You