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Kubernetes Assignment-1

0] kubectl

kubectl controls kubernetes using http rest api. Kubectl is client of kubernetes api.

Every operation is exposed as an api endpoint and can be executed by http request to this endpoint

kubeconfig file used to configure access to kubernetes. It is in /home/.kube/config. It contains the configuration for clusters.

1]kube-controller-manager

it is main part of kubernetes. It monitors all the processes. And run in master node.

This controller watch the status of different services deployed through api. It take care of nodes, workloads, namespace and service accounts.

2]kube scheduler:

it is responsible for schedule pods onto nodes.

When we create a pod scheduler checks that any new pod created or not. And any node assign to it. If not then scheduler assigns a node to pod.

Kube scheduler selects a node for pod using 1)Filtering 2) Scoring.

Filtering finds the set of nodes where it is feasible to schedule a pod

In scoring step scheduler ranks remaining nodes to choose most suitable pods placement

3]Kube-apiserver

kubernetes apiserver validate and configures data for the api object which include pods, services, relation controllers and others it services rest operations

4]Kubeproxy

Kubeproxy is a network proxy runs on each node. It is key component of any kubernetes deployment. It load balance traffic

5]What is Kubelet?

Kubelet is a primary node agent run on each node. It is a part of kubernetes arch. It is responsible for driving docker, reporting status to master, setting node-level resources.

It runs pods which is a collection of containers which share several resources.

6] etcd in kubernetes

etcd is a distributed key-value store.. primary datastore in kubernetes. Kubernetes use it as a database. It store and replicate all kubernetes clusters state. It stores actual state

of system and desired state of system in etcd. Race conditions and networking problems are managed by etcd

7]Pod in kubernetes: Relation between pod and container:

pod is a group of containers that are deployed together on same host.

It operates at one level higher than individual container. Group of containers work together to produce an artifact or process a set work.

These pods are controlled by replication controller which create and destroy replicas of pod as needed.

Pods are group of one or more application containers.

8]kube namespace:

It provides additional qualification to resource name.

This is helpful when multiple teams are using same cluster and there may be chances of name collision. It works as a wall between multiple clusters.

Pod -pod communication using same namespace.

Namespaces are virtual clusters at top of physical cluster.

9]

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