Architecture of Kubernetes

Kubernetes cluster is a set of machines called nodes they are used to containerized applications

→ Basic kubernetes architecture exists in two parts. the control plane and the nodes in the cluster.

→ Each node could be either a physical or virtual machine and is its own Linux environment.

→ A Pod always runs on a Node.

→ Pods are ~~just~~ nothing but having one or more containers. In kuberenetes we actually use pods instead of containers.

→ In kuberrnetes Multiple pods can run on one Node. But A single Pod cannot travel multiple nodes.

2) Kubenetes Control plane

The control plane is ~~like~~ the nerve center that houses kuberrnetes cluster architecture components that control the cluster.

Architecture

The Architecture of kubernetes includes a master node and one or more worker nodes.

→ Master node includes (processes) API server, Controller manager server, Sheduler etcd.

→ worker nodes includes like kublet
cAdvisor
kube proxy
Pods.

→ Pods are the smallest unit on the kubernetes

→ Pod is nothing but a group of one or more application containers.

→ Pod has a unique Ip address

→ containers fit insides the pod that shares resources so pod itself shares memory, cpu disk space etc.

→ Master node is likes it dictates that like what to do, and what not to do

kubernetes

→ It is a open-source container orchestration platform and it automates the deployments and scaling, managing the containerized applicat

→ In other words, kubernet is a platform for running and managing from many containe runtimes. Kubernet is better bcz it can manage container resources from a single control plane.

how to create container in docker?

1) using the run command.

Diff b/w reset and revert?

→ git reset does this by moving the current head of the branch back to the specified commit, thereby changing the commit history.

→ git revert does this by creating a new commit that undoes the changes in the specific commit and so does not change the history.

Master/slave architecture?

→ They are used to run containerized applicatio and handling networking to ensure traffic b/w the applications.

→ A node which is linked to another node is termed as a "slave node" and the node which it is linked is termed as master node.

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→ A node which is linked to another node is termed as a "slave node" and the node which it is linked is termed as master node.

→ Master node is responsible for cluster management and for providing API used to configure and manage resources with in the cluster.

→ A master node can have many slave nodes, however a slave node can have only one master node.

Cloud in Aws

→ Aws is designed to allow application providers, ISVs, and vendors to quickly & securely host our applications.

how to delete the commit in git?

Git Reset.

Metadata

A set of data that describes & gives the information about other data.

What are container images?

→ A container image is a static file with executable code that that can create a container on a computing system.

→ A Container image is immutable - and can be deployed consistently in any environment

Pod Container

Pods are the smallest deployable units of computing that we can create and manage in kubernetes.

Kubectl

Kubectl is a command line

→ kubectl allows us to run commands against kubernetes clusters.

K8S Advantages

Auto scaling ⇒ we can increase/decrease replicas based on requirements.

Autohealing ⇒ if container fails K8S will automatically replay the new pod before old pod goes to terminate state

monitoring ⇒ metric service (work on any node and get info from any pod through c-advisor

Better security