Kubernetes Questionnaire

Overview

Containerization is ruling the current IT industry; however, it is incomplete and difficult to manage without an orchestration system. Kubernetes is one of the eminent container orchestration system that helps you to manage your containerized applications in different deployment environments. It is open-source, originally designed by Google, and is now being maintained by the Cloud Native Computing Foundation (CNCF). Features like Self-Healing, Automated Rollouts & Rollbacks, Horizontal Scaling of Containers, Storage Orchestration, etc. make it powerful.

Take this assessment to check where do you stand in the Container Orchestration journey.

40 Question/Answer set

QUIZ1

Which of the following statements about Deployments in Kubernetes is true?

A Deployment is used to manage stateless applications and provides declarative updates
A Deployment is used to define persistent storage volumes
A Deployment automatically creates and manages ServiceAccounts
A Deployment can only manage a single pod replica

Which Kubernetes object is responsible for ensuring that a specific pod runs on every node in a cluster?

DaemonSet
StatefulSet
ReplicaSet
None of the Above

Which namespace is used by Kubernetes to create its objects?

Default
kube-system
kube-public
kube-node-lease

What role does a kubelet play in Kubernetes?

Software used to run containers outside of pods
A lightweight version of Kubernetes
A device that collects and organizes data for easy access
A node agent that manages pods and their containers

Which component of Kubernetes maintains network rules on nodes?

kube-proxy
Container Network Interface
kubelet
None of the Above

What is the purpose of a ReplicaSet in Kubernetes?

Run and maintain a specified number of identical pods
Store non-confidential data in key-value pairs
Monitor and respond to environmental latency
Create and manage volumes

Who is responsible for overseeing node availability in Kubernetes?

Node Controller
Job Controller
Endpoint Controller
Service Account Controller

What is the command to scale a Deployment to a specific number of replicas in Kubernetes?

kubectl scale deployment <deployment-name> --replicas=<number>
kubectl set replicas <deployment-name> --count=<number>
kubectl scale pods <deployment-name> --count=<number>
kubectl update deployment <deployment-name> --replicas=<number>

Which kubectl command would you use to get detailed information about a specific pod in a Kubernetes cluster?

kubectl describe pod <pod-name>
kubectl get pod <pod-name> --details
kubectl pod details <pod-name>
kubectl show pod <pod-name>

By default, in which time zone do CronJobs run in Kubernetes?

UTC
CST
GMT
None of the Above

Which of the below command gets you inside a Pod?

kubectl exec -it <pod_name>
kubectl exec -it <pod_name> -- /bin/sh
kubectl exec -it /bin/sh
kubectl exec <pod_name> /bin/sh

Which one of the following is not a valid service type in Kubernetes?

ClusterIP
NodePort
LoadBalancer
None of the above

Which of the following statements about Kubernetes is correct?

It has Self-healing capabilities.
It can scale up and scale down based on application requirements.
It supports automated scheduling.
All of the above

What is the purpose of a ConfigMap in Kubernetes?

To store and manage sensitive information like passwords
To store and manage configuration data as key-value pairs
To define storage volumes for pods
To create persistent storage resources for applications

The smallest deployable unit in Kubernetes is?

Pod
Container
Volume
None of the Above

The kube-apiserver runs on port?

10251
10250
6443
10252

Which command is used to safely evict all pods from a node?

kubectl cordon
kubectl uncordon
kubectl drain
None of these

Which Kubernetes object is used to store and encode sensitive data?

ConfigMaps
Secrets
Local variables
None of the above

Which hashing method is used to encrypt the token CA certificate that facilitates the joining of worker nodes with the master node?

Sha64
Sha128
Sha256
MD5

What is the TTL (Time To Live) of a token generated by kubeadm init?

12 hours
24 hours
36 hours
48 hours

QUIZ2:

How does a StatefulSet differ from a Deployment in terms of storage?
StatefulSets cannot use PersistentVolumes
StatefulSets provide stable, persistent storage for each replica
There is no difference between StatefulSets and Deployments in terms of storage

None of the above

During a Kubernetes upgrade, which component should be upgraded on the master nodes first?

kubelet
kube-apiserver
kubeadm
kubectl

Which Kubernetes object grants access to resources at the cluster level?

Role
RoleBinding
ClusterRole
ServiceAccount

Which of the following is responsible for providing persistent storage in Kubernetes?
Volumes
PersistentVolume (PV)
PersistentVolumeClaim (PVC)
StatefulSet

What is the purpose of a PersistentVolumeClaim (PVC) in Kubernetes?
To request and claim storage resources from the underlying PersistentVolume (PV)
To manage storage classes
To create and manage volumes
To persistently store logs and application data

What must be done as a best practice before upgrading the worker nodes in a Kubernetes cluster?

Drain the nodes
Delete the worker nodes

Upgrade the kubelet only
Reboot the master node

Which Kubernetes object is used to define rules for ingress and egress traffic to/from a pod?

Service
Ingress
NetworkPolicy
Endpoint

What is the purpose of a ClusterRoleBinding in Kubernetes?

To bind a ClusterRole to a specific namespace
To bind a Role to a service account at the cluster level
To bind a ClusterRole to a user, service account, or group at the cluster level
To grant access to cluster-level resources to a pod

Which of the following attribute(s) is used to taint a Node?

NoExecute
NoSchedule
PreferNoSchedule
All of the Above

Which probe informs the kubelet whether a container is ready to start accepting traffic?

Readiness
Liveness
Startup
None of the Above

Which command is used to upgrade the Kubernetes control plane after upgrading kubeadm package?

kubeadm upgrade apply
kubeadm upgrade control-plane
kubectl upgrade
kubeadm apply upgrade

Which Kubernetes object allows dynamic provisioning of storage in Kubernetes?
PersistentVolumeClaim (PVC)
PersistentVolume (PV)
StorageClass
StatefulSet

Which of the following is true about Kubernetes NetworkPolicy?

NetworkPolicies are applied cluster-wide
NetworkPolicies are only used for external traffic management
NetworkPolicies are namespace-specific
NetworkPolicies cannot restrict traffic based on pod labels

What is the purpose of a Role in Kubernetes?

To define a set of rules that allow access to cluster-wide resources
To define a set of rules that allow access to resources within a specific namespace
To bind a service account to a set of permissions
To create a new Kubernetes cluster

Is it possible for a Pod to contain multiple containers?
True
False

Which type of Kubernetes object is commonly used for applications that require stable, unique network identifiers and persistent storage?
Deployment
ReplicaSet
StatefulSet
DaemonSet

Which of the following commands removes a taint from a worker node?

kubectl taint node node_name key-
kubectl untaint node node_name key=value:effect
kubectl taint node node_name key=value:effect-
kubectl untaint node node_name key-

What is the main purpose of a NetworkPolicy in Kubernetes?

To manage how pods communicate with each other
To configure the DNS resolution for pods
To define the resource limits for pods
To assign unique IP addresses to each pod

Which Kubernetes component collects resource metrics like CPU and memory usage to be used by the Horizontal Pod Autoscaler (HPA)?

kubelet
Metrics Server
Prometheus
Kubernetes Dashboard

What is the primary function of the Kubernetes Horizontal Pod Autoscaler (HPA)?

To scale the number of nodes in the Kubernetes cluster based on demand
To automatically scale the number of pods in a deployment based on resource usage
To increase the resource limits of individual pods in a deployment
To manage the scaling of external services integrated with kubernetes