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## Kubernetes Interview Questions Advanced

### What is Kubernetes?

**Kubernetes** is a type of open-source platform that automates all the Linux container programs. Famous companies like Huawei, Pokemon, eBay, The New York Times, Yahoo Japan, and ING uses the Kubernetes. Nowadays Kubernetes had become one of the most common computer programs. Google engineers are the ones who first designed these types of computer programs.

Kubernetes also helps to eliminate all the manual process works that are especially involved with deploying and scaling the container applications. So there are a few **Kubernetes Interview Questions Advanced** that will help you a lot.

Kubernetes is a type of container Orchestration tool. It has the ability to simplify the management of the containers to make them more efficient to work.

### Q1. What do you understand by Kubernetes?

Kubernetes is basically a type of an open – source container. Kubernetes has the potential to hold the container deployment, scaling and descaling of the container and load balancing. Kubernetes was being developed in the year of 2014. It is also used to manage the Linux containers across the privates, hybrid and cloud environments.

### Q2. What are the difference between Kubernetes and Docker Swarm?

The followings are the main difference between Kubernetes and docker and they are:

- The installation structure of the Kubernetes is very complicated but if it is once installed then the cluster is robust. On the other hand, the Docker swarm installation process is very simple but the cluster is not at all robust.
- Kubernetes can do the process of the auto scaling but the Docker swarm cannot do the process of the auto scaling.
- Kubernetes is highly scalable and also scales fast. But the Docker swarm scales are 5x faster than Kubernetes and is also highly scalable.

### **Q3. What are nodes in kubernetes?**

A node is a type of work machine in Kubernetes that was previously known as a minion. A node can be a type of virtual machine or the physical machine. It always depends upon the clusters. Each of the nodes provides the services that are necessary to run pods, and it is also managed by the master components.

### **Q4. What does the nodes status contains?**

The followings are the main components that the node status:

- Address
- Condition
- Capacity
- Info

### **Q5. What are pods in Kubernetes?**

A Kubernetes pod is a group of containers that are being deployed in the same host. Pods have the capacity to operate one level higher than the individual containers. This is because pods have the group of containers that work together to produce an artefact or to process a set of work.

### **Q6. What are namespaces in Kubernetes?**

Kubernetes is especially intended for the use of the environments with many other users that are being spread across multiple teams or projects. Namespaces are the way to divide the cluster resources between the multiple users.

### **Q7. What are the initial namespaces from which the Kubernetes starts?**

The followings are the three initial namespaces from which the Kubernetes starts:

- Default
- Kube – system
- Kube – public

### **Q8. What is heapster in Kubernetes?**

Heapster is a type of cluster-wide aggregator that helps in the process of monitoring and event data. Heapster helps to enable the container cluster monitoring and performance analysis for Kubernetes.

### **Q9. What is minikube?**

Minikube is a type of tool that makes the Kubernetes easy to run locally. Minikube basically runs on the single nodes Kubernetes cluster that is inside the virtual machine on your laptop. This is also used by the developers who are trying to develop by using Kubernetes day to day.

### **Q10. What are the features of Minikube?**

The followings are the main features of the Minikube:

- DNS
- Nodeports
- Configure maps and secrets
- Dashboards
- Enabling CNI
- Ingress
- Container runtime: Docker, rkt, CRI – O and containerd

### **Q11. What is GKE in Kubernetes?**

Firstly GKE stands for Google Kubernetes Engine. GKE is a management and an orchestration system that is used for Docker container and all the container clusters that basically run within the Google's public cloud services. Google Kubernetes engine is based on Kubernetes.

### **Q12. What are the uses of Google Kubernetes Engine?**

The followings are the uses of the Google Kubernetes Engine:

- Create or resize Docker container clusters
- Creates container pods, replication controller, jobs, services or load balancer
- Resize application controllers
- Update and upgrade container clusters
- Debug container clusters.

### **Q13. What do you mean by Kubelet?**

Kubelet is a type of primary node agents that especially runs on each node. Kubelet only works on the descriptions that the containers provide to the Podspec. Kubelet also makes sure that the container described in Podspec is healthy and running.

#### **Q14. What are the different types of services being provided by Kubernetes?**

The followings are the different types of services being provided by the Kubernetes:

- Cluster IP
- Node Port
- Load Balancer
- External name

#### **Q15. What is Kubernetes Load Balancing?**

Load Balancing is one of the most common and the standard ways of exposing the services.

There are two types of load balancing in Kubernetes and they are:

1. Internal load balancer – This type of balancer automatically balances loads and allocates the pods with the required configuration.
2. External Load Balancer – This type of balancer directs the traffic from the external loads to backend pods.

#### **Q16. What are the main components of the Kubernetes?**

The following are the main components of the Kubernetes:

- API server
- Scheduler
- Controller manager
- .etcd
- .Addons

#### **Q17. What is Prometheus in Kubernetes?**

**Prometheus** is an open-source application used for metrics-based monitoring and alerting. Prometheus calls out to your application, pulls real-time metrics, compresses and stores them in a time-series database. Moreover, it offers a powerful data model and a query language and can provide detailed and actionable metrics. When you deploy a new version of the app, k8s creates a new pod (container) and after the pod is ready k8s destroy the old one. It is on a constant vigil, watching the k8s API and when detects a change it creates a new Prometheus configuration, based on the services (pods) changes.

## **Q18. What is orchestration in Kubernetes?**

**Container orchestration in Kubernetes** is an automatic method of scheduling the work of each container for applications based on microservices within multiple clusters. Config files decide on how to work between containers and the orchestration tool also schedules deployment of containers and concludes the host for the container. After a host is determined, the orchestration tool manages the lifecycle of the container and then, the container orchestration tools operate in any environment that manages containers.

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