Kubernetes Practice Questions 1

01. What is **Kubernetes**?

*‘Is open source platform for containers orchestration, scale up and down automatically an applications or containers.’*

“**Kubernetes** is an open-source container management tool which holds the responsibilities of container deployment, scaling & descaling of containers & load balancing. Being the Google’s brainchild, it offers excellent community and works brilliantly with all the cloud providers. So, we can say that Kubernetes is not *a containerization platform, but it is a multi-container management solution. ”*

***K8s*** *is a container orchestration tool that not only manages container but also provide high availability (zero downtime), auto scaling (up an down as needed), self healing, backup storage.*

02. How Container orchestration is beneficial?

* *Auto-scaling(up an down as needed)*
* *Self healing*
* *Ability to deploy high volume container on multiple nodes*
* *Backup storage*
* *High availability (zero downtime)*

03. How are Kubernetes and Docker related?

* *Container runtime tools*

04. What is a node in Kubernetes?

*Envelop around the VMs.*

05. What are pods in Kubernetes?

* Pod are also the main consumer of K8s objects
* Envelop around the containers.
* Pods are smallest unit in K8s and are over wrapped around containers that contains applications

06. What is a Kubernetes deployment?

*A k8s deployment is a K8s element that manages pod creation and performance. Deployments are manage by K8s deployment controller. Deployment use*

*a pod template, which contain a specification for its pods. The pod specification determine how each pod should look like: what app should run*

*inside its containers, which volume the pods should mount, its labels, and more...*

09. What are Kubernetes Services?

*K8s services are object that allow application to be access by the user: internally(within the cluster) or externally(load-lancer(cloud))/node port(premises*).

1. What is replicaset in kubernetes?

*A replicaset is a K8s object that make sure a set number of Pod are available and running all the time.*

1. What are clusters in Kubernetes?

*A cluster is an over wrap around VM/V Ms also call worker Group/worker node*

1. What are Daemon sets?

A DaemonSet ensures that all (or some) Nodes run a copy of a Pod.

1. What is Heapster in Kubernetes?

*Heapster is a cluster-wide aggregator of data provided by Kubelet running on each node.*

1. What is a Namespace in Kubernetes?

*A namespace is a k8s object that divide a cluster into multiple room for better management.It is a sub cluster in K8s for better management.*

1. A namespace is a k8s object that divide a cluster into multiple room for better management.
2. Why use namespaces?

*It is a sub cluster in K8s for better management.*

1. What is the Kubernetes controller manager?

***Controller Manager*** *is a daemon that embeds controllers and does namespace creation and garbage collection.*

*The key controllers are replication controller, endpoint controller, namespace controller, and service account controller.*

*The controller manager runs different kind of controllers to handle nodes, endpoints, etc.*

1. What are the types of controller managers?

* Node controller
* Route controller
* Volume controller
* Service controller

18. What is ETCD in Kubernetes?

20. What is NodePort?

22. What is Kubelet?

25. What is Kube-proxy?

26. Can we put multiple containers inside a pod?

41. Disadvantages of Kubernetes

42. Why use Kubernetes?

43. What is the function of clusters in Kubernetes?

44. Characteristics of Kubernetes

47. Explain the main components of Kubernetes architecture?

48. How do we control the resource usage of POD?

49. What are the various K8s services running on nodes and describe the role of each service?

53. How to get the central logs from POD?

68. What are the best security measures that you can take while using Kubernetes?

69. What are the main differences between the Docker Swarm and Kubernetes?

70. What are the types of secrets available in Kubernetes?

71. How to use secrets in Kubernetes?

72. How to Create and Use ConfigMap with Kubernetes?

73. What is a Kubernetes StatefulSet?

76. What is the difference between Docker Compose and Kubernetes?

78. What is the difference between ClusterIP, NodePort and LoadBalancer service types in Kubernetes?

79. What is the difference between kubernetes load balancer and ingress controller?

80. How to delete all pods in kubernetes namespaces?

81. How do I force Kubernetes to re-pull an image?

82. How can I keep a container running on Kubernetes?

83. What is required to deploy a simple application, like a web server in Kubernetes?

84. When would you use a Deployment versus a StatefulSet versus a DaemonSet?

85. What are container orchestrators and why are they required?

86. What type of workloads run well on Kubernetes, and what types do not?

87. What is the Operator pattern and when should you use it?

88. How can RBAC be used to grant permission to Kubernetes resources?

89. How would you expose an application running in a Kubernetes cluster to the outside world?

90. What is Helm Charts?

91. How to persist data in kubernetes using volumes?

92. How to create storage class in kubernetes?

93. How to deploy to kubernetes cluster on google cloud?

94. Kubernetes APIs have been described as both imperative and declarative. What does this mean?