Part – 01

Question 1

What is the difference between Docker and Kubernetes?

Docker is a Container platform where as kubernetes is a container orchestration environment that offers capabilities like Auto Healing, Auto Scaling, Clustering and Enterprise Level support like Load Balancing.

Question 2

What are the main components of Kubernetes Architecture?

On a broad level, you can divide the kubernetes components in two parts.

1. **Control Plane (API Server, Scheduler, Controller Manager, C-CM, ETCD)**
2. **Data Plane (Kubelet, Kube-Proxy, Container Runtime)**

Question 3

What are the main difference between the Docker Swarm and Kubernetes?

Kubernetes is better suited for large organizations as it offers more scalability, networking capabilities like policies and huge third-party ecosystem support.

Question 4

What is the difference between Docker Container and Kubernetes Pod?

A Pod in kubernetes is a runtime specification of a container in docker. A Pod provides more declarative way of defining using YAML and you can run more than one container in a POD.

Question 5

What is a Namespace in Kubernetes?

In Kubernetes namespace is a logical isolation of resources, network policies, RBAC and everything. For example, there are two projects using same K8S Cluster. One Project can use NS1 and other Project can use NS2 without any overlap and authentication problems.

Question 6

What is the role of Kube-Proxy?

Kube-Proxy works by maintaining a set of network rules on each node in the cluster, which- are updated

dynamically as services are added or removed. When a client sends a request to a service, the request is intercepted by Kube-Proxy on the node where it was received. Kube-Proxy then looks up the destination endpoint for the service and routes the request accordingly.

Kube-Proxy is an essential component of a Kubernetes Cluster, as it ensures that services can communicate with each other.

Question 7

What are the different types of services within Kubernetes?

There are three different types of services that a user can create.

1. Cluster IP Mode
2. Node Port Mode
3. Load Balancer Mode
4. Service Discovery

Question 8

What is the difference between NodePort and LoadBalancer type service?

When a service is created a NodePort type, The kube-proxy updates the IPTables with Node IP address and

port that is chosen in the service configuration to access the pods.

Where as if you create a Service as type LoadBalancer, the Cloud control manager creates a external load balancer IP using the underlying cloud provider logic in the C-CM. Users can access services using the external IP.

Question 9

What is the role of Kubelet?

Kubelet manages the containers that are scheduled to run on that node. It ensures that the containers are running and healthy, and that the resources they need are available.

Kubelet communicates with the Kubernetes API server to get information about the containers that should be running on the node, and then starts and stops the containers as needed to maintain the desired state. It also monitors the containers to ensure that they are running correctly, and restarts them if necessary.

Question 10

Day to Day activities on Kubernetes?

As part of the Devops Engineer role we manage kubernetes clusters for our organization, and we also ensure that you know the applications are deployed

onto the kubernetes cluster and there are no issues with the application so we have set up monitoring on our kubernetes cluster we ensure that whenever there are bugs on the kubernetes cluster for example uh the developers are not able to troubleshoot some issue with respect to pods, developers are not to troubleshoot with respect to services they are not able to you know uh route the traffic in inside the kubernetes cluster so in such cases as subject matter expertise on the kubernetes clusters we coming to picture and we solve their problems but apart from that we also do a lot of maintenance activities for example uh we have kubernetes clusters with three master nodes and 10 worker nodes so we have to do some continuous maintenance activities on this worker nodes probably uh you know upgrading the versions of this worker nodes or installing some default mandatory packages ensuring that these workers nodes are not uh security uh exposed to security vulnerabilities so all of these things are our day-to-day activities on kubernetes apart from that we also serve as subject matter expertise on kubernetes so if anyone in the organization has any issues with kubernetes they create a Jeera items for us or you know they create tickets for us and we will help them

in solving or making them understand the concept of kubernetes.