

Kubernetes interview questions - PART 1

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kubernetes

1. What is Kubernetes? Why organisations are using it?

Kubernetes is an open-source system that provides users with the ability to *manage, scale and deploy containerised applications*. - *CONTAINER ORCHESTRATION TOOL*

To understand what Kubernetes is good for, let's look at some examples:

- You would like to run a certain application in a container on *multiple different locations and sync* changes across all of them, no matter where they run
- Performing *updates and changes across hundreds of containers*
- Handle cases where the current load requires to *scale up (or down)*



2. When or why NOT to use Kubernetes?

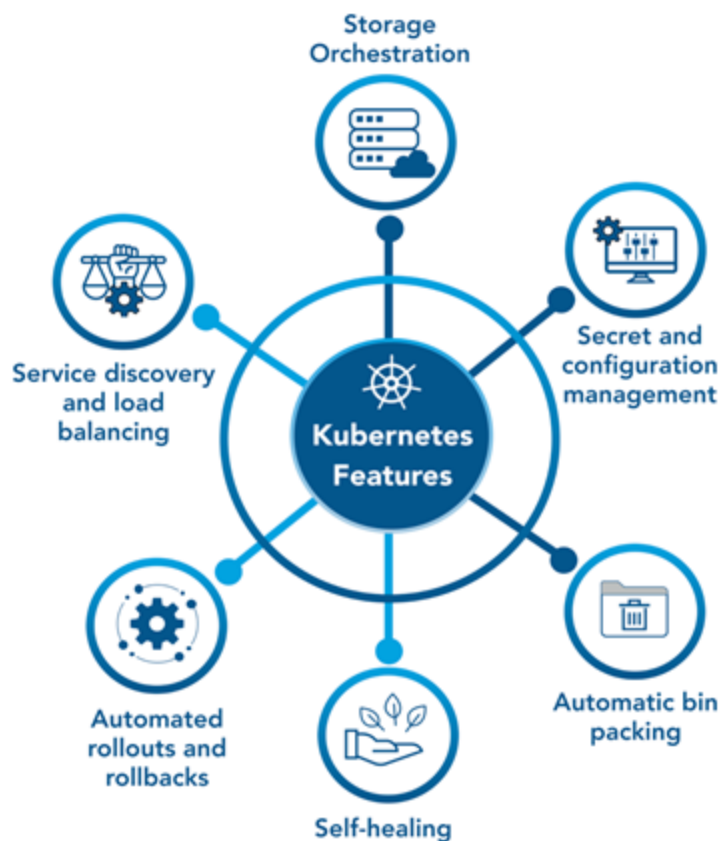
- If you manage low level infrastructure or bare-metals, Kubernetes is probably not what you need or want
- If you are a small team (like less than 20 engineers) *running less than a dozen of containers, Kubernetes might be an overkill* (even if you need scale, rolling out updates, etc.). You might still enjoy the benefits of using managed Kubernetes, but you definitely want to think about it carefully before making a decision on whether to adopt it.

3. What are some of Kubernetes features?

- **Self-Healing**: Kubernetes uses *health checks* to monitor containers and run certain actions upon failure or other type of events, like restarting the container
- **Load Balancing**: Kubernetes can *split and/or balance requests* to applications running in the cluster, based on the state of the Pods running the application
- **Operators**: Kubernetes packaged applications that can use the API of the cluster to

update its state and *trigger actions based on events* and application state changes

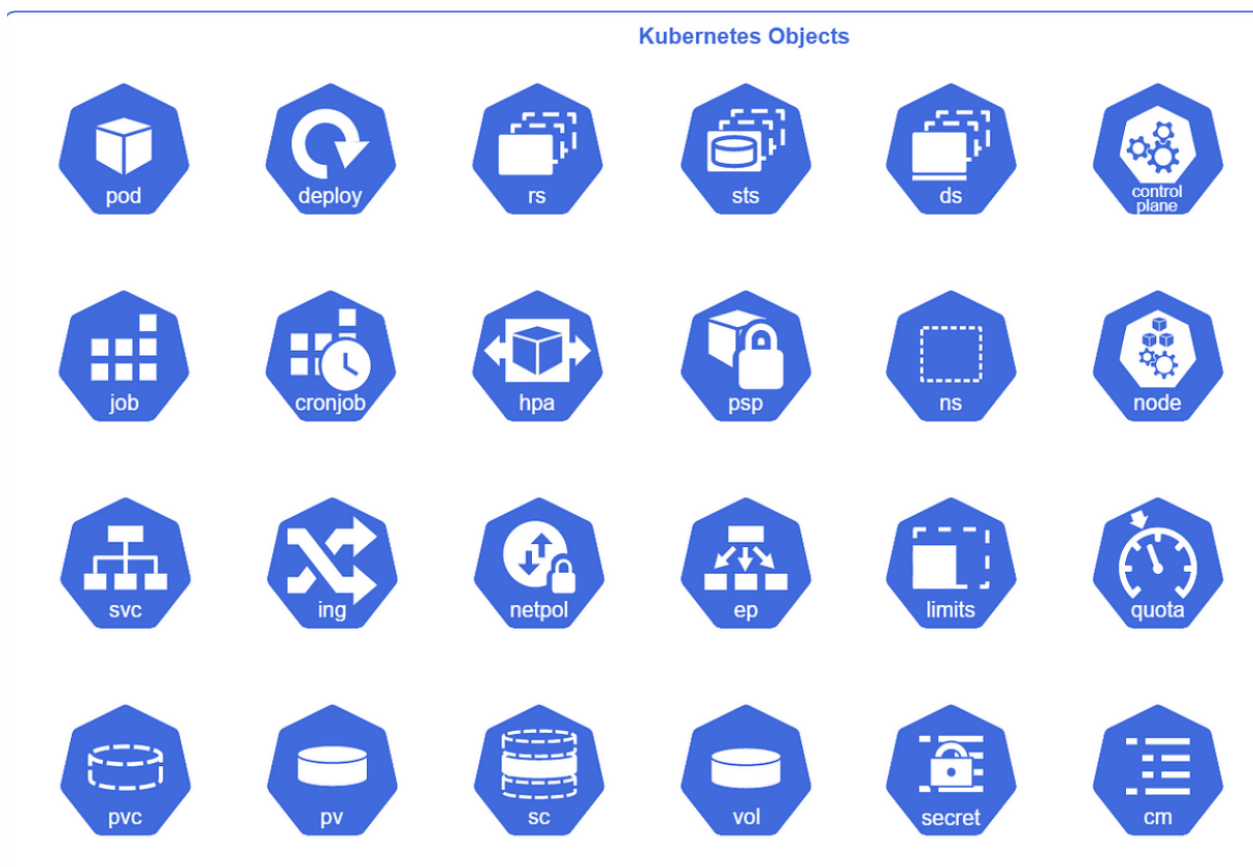
- **Automated Rollout**: Gradual *updates roll out* to applications and support in *roll back* in case anything goes wrong
- **Scaling**: Scaling horizontally (down and up) based on different *state parameters and custom defined criteria*
- **Secrets**: you have a mechanism for *storing user names, passwords and service endpoints* in a private way, where not everyone using the cluster are able to view it



4. What Kubernetes objects are there?

- Pod
- Service

- ReplicationController
- ReplicaSet
- DaemonSet
- Namespace
- ConfigMap



5. What fields are mandatory with any Kubernetes object?

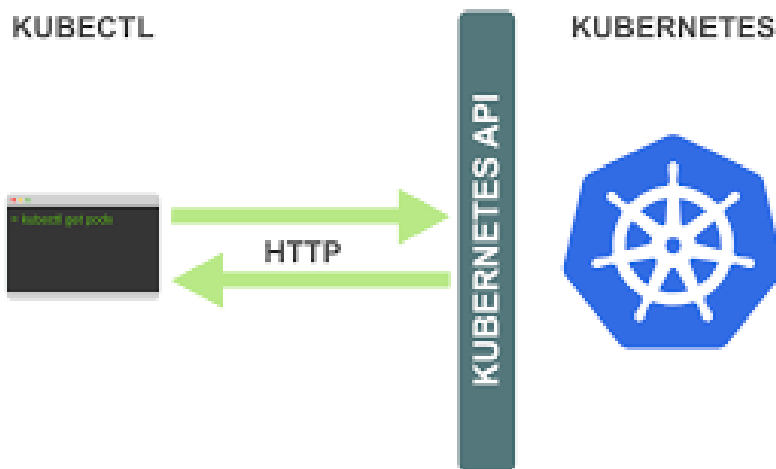
metadata, kind and apiVersion

K8s manifest file ::

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: todo-client-app-deploy
spec:
  replicas: 3
  selector:
    matchLabels:
      app: todo-client-app
  template:
    metadata:
      labels:
        app: todo-client-app
    spec:
      containers:
      - image: todo-client-kubernetes-app:latest
        name: container1
        imagePullPolicy: Always
```

6. What is kubectl?

Kubectl is the Kubernetes command line tool that allows you to run commands against Kubernetes clusters. For example, you can use kubectl to deploy applications, inspect and manage cluster resources, and view logs.



7. What Kubernetes objects do you usually use when deploying applications in Kubernetes?

- Deployment - creates the Pods () and watches them
- Service: route traffic to Pods internally
- Ingress: route traffic from outside the cluster

8. Why there is no such command in Kubernetes? `kubect1 get containers`

Because container is not a Kubernetes object. The smallest object unit in Kubernetes is a Pod. In a single Pod you can find one or more containers.

9 . What actions or operations you consider as best practices when it comes to Kubernetes?

- Always make sure Kubernetes YAML files are valid. Applying automated checks and pipelines is recommended.
- Always specify requests and limits to prevent situation where containers are using the entire cluster memory which may lead to OOM issue

- Specify labels to logically group Pods, Deployments, etc. Use labels to identify the type of the application for example, among other things

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*Thank
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