Kubernetes

Let’s understand some concepts of K8S

Kubectl -

This is a command-line utility that allows us to communicate with the Kubernetes cluster. Using `kubectl`, we can interact with the cluster to retrieve information or perform tasks. For example, the command `kubectl get pods` retrieves information about the Pods in the cluster. Note that `kubectl` must be installed separately.

Pod

A Pod is the smallest unit in a Kubernetes cluster. It acts as a wrapper for one or more containers. Inside a Pod, the container(s) run and share resources like storage, network, and configuration.

Namespace

A Namespace is a logical separation of resources within a Kubernetes cluster. It helps group related resources under a single umbrella, making tracking and managing them easier and more organized.
We can create a namespace through a single-line command or YAML file.
Such as
kubectl create namespace <namespace-name>

```
kind: Namespace

apiVersion: v1

metadata:

 name: nginx
```

Labels

Labels act as tags for resources in the key-value format. Labels are used for Pods, Services, Deployments, and more.

Selectors:

Selectors are used to identify specific resources for performing actions. They ensure that resources interact with the appropriate ones based on their labels.

Let's understand yaml file of a pod

```
apiVersion: v1
kind: Pod      # Type of resource
metadata:
 name: nginx  # Name of a Pod
 labels:
   type: web-server
   app: nginx
spec:
 containers:
 - name: nginx # Container name
   image: nginx:latest
   ports:
   - containerPort: 80


➜  Nginx git:(master) ✗ kubectl get pod
NAME    READY   STATUS              RESTARTS   AGE
nginx   0/1     ContainerCreating   0          36s
```

This is all for today. I will continue tomorrow with other concepts and components of Kubernetes. Thank you.