Kubernetes Essential Concepts

Kubernetes (K8) is a portable, extensible open-source platform for managing containerized workloads and services

The K8 **Platform** is designed to be extensible.

- A **Label** can be attached to a resource to allow easy organization.

- An **Annotation** can be attached to a resource to simplify workflows and allow easy/improved management.

- The K8 **Control Plane** uses published APIs. Anyone can build a component and plug it in.

- K8 **Build instructions** depend on the type of image / container being targets. They include "Dockerfile' for Docker and so on.

  For build instructions, images and containers, the Docker concepts can be used, though K8 supports more container types that just Docker.

- A K8 **Image** results from applying the build instructions. They include a Docker image for Docker and so on.

- A K8 **Container** results from loading / running an image in K8.

- K8 supports multiple **Container Runtimes** including for Docker containers.

- A K8 **Pod** is a group of one or more Containers.

- A K8 **Deployment** manages a pod.

- A K8 **Service** exposes a pod to the outside world.

- A K8 **Node** runs one or more Pods.