**The What and Why of Kubernetes**

Learn after Swarm

Popular container orchestrator

Orchestrator: takes your containers and nodes and decides how to run container workloads across those nodes. Released by Google

A set of APIs in containers. Runs on docker

Provides API/CLI to manage containers across servers

Kube Control

Many clouds provide it for you as a service

Many vendors make a distribution of it

Next logical step to faster DevOps

Not every solution needs orchestration

Servers x Change Rate = benefit of orchestration

Automate change, monitor state

May be unnecessary for small teams, low change rate

Decide which distribution: cloud or self-managed (docker enterprise, open-shift, rancher, vmware pks)

Needs a lot of things added to make it easy to use out of the box. Easier to use cloud solution

Don’t usually need pure version of Kubernetes

Kubernetes vs. Swarm

Both container orchestrators

Swarm is easier to deploy/manage

Kubernetes: more features and flexibility

Swarm comes with Docker

Swarm runs anywhere Docker runs

Secure by default. Mutual TLS authentication. Encrypts database to protect secrets

Easier to troubleshoot

Kubernetes

Widest cloud and vendor support

Widest adoption and community

Covers wide set of use cases

Many third-party options

Terms

K8’s or Kube for short

Kubectl: CLI to configure Kubernetes and manage apps