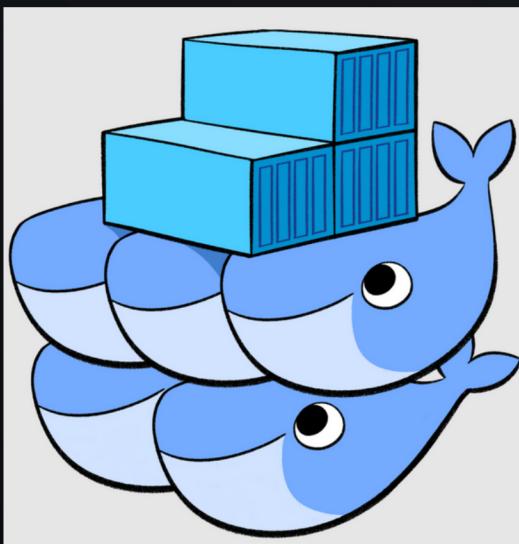


KUBERNETES(A.K.A K8S) INTRO

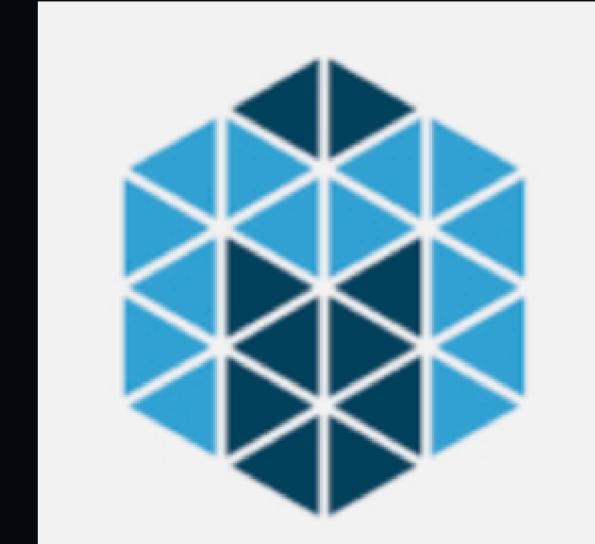
- Kubernetes originates from Greek, meaning **helmsman** or **pilot**
- Google open-sourced the project in 2014
- Borg: The Predecessor to Kubernetes
- The combination of Google's experiences and best-of-breed ideas from community
- It is **Container Orchestration** technology



Docker Swarm
(easy)

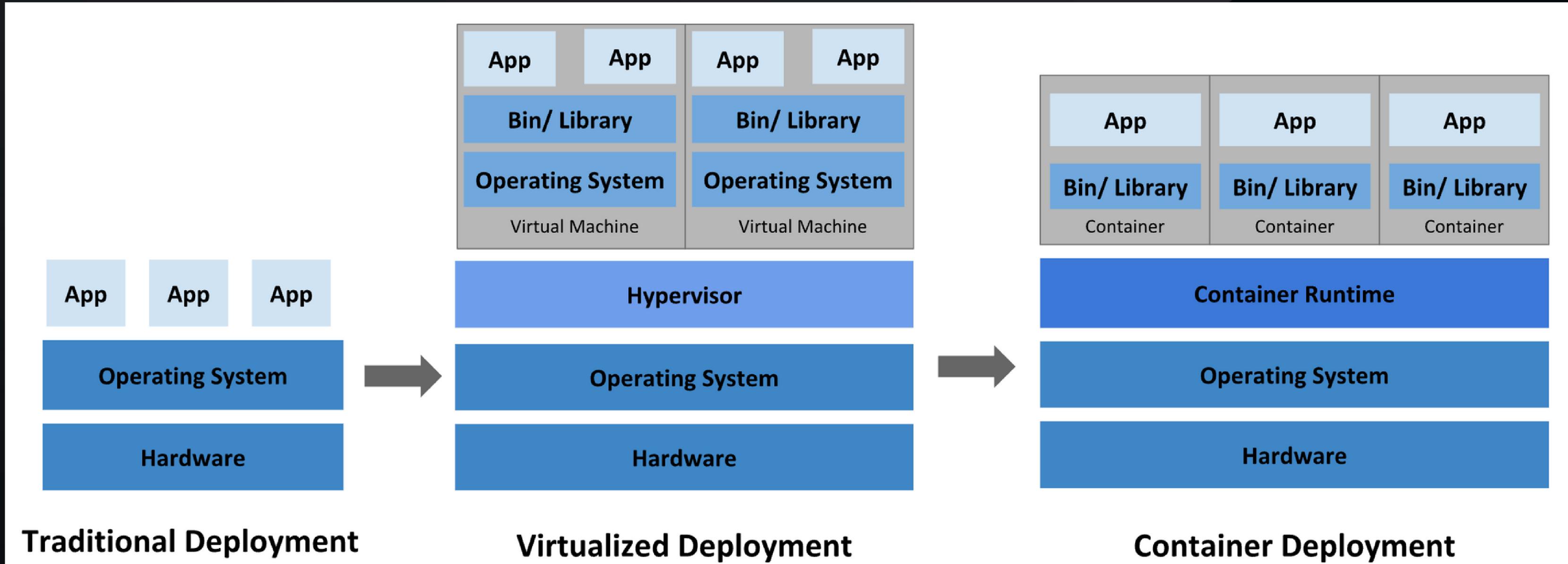


K8S
(medium)



Mesos
(hard)

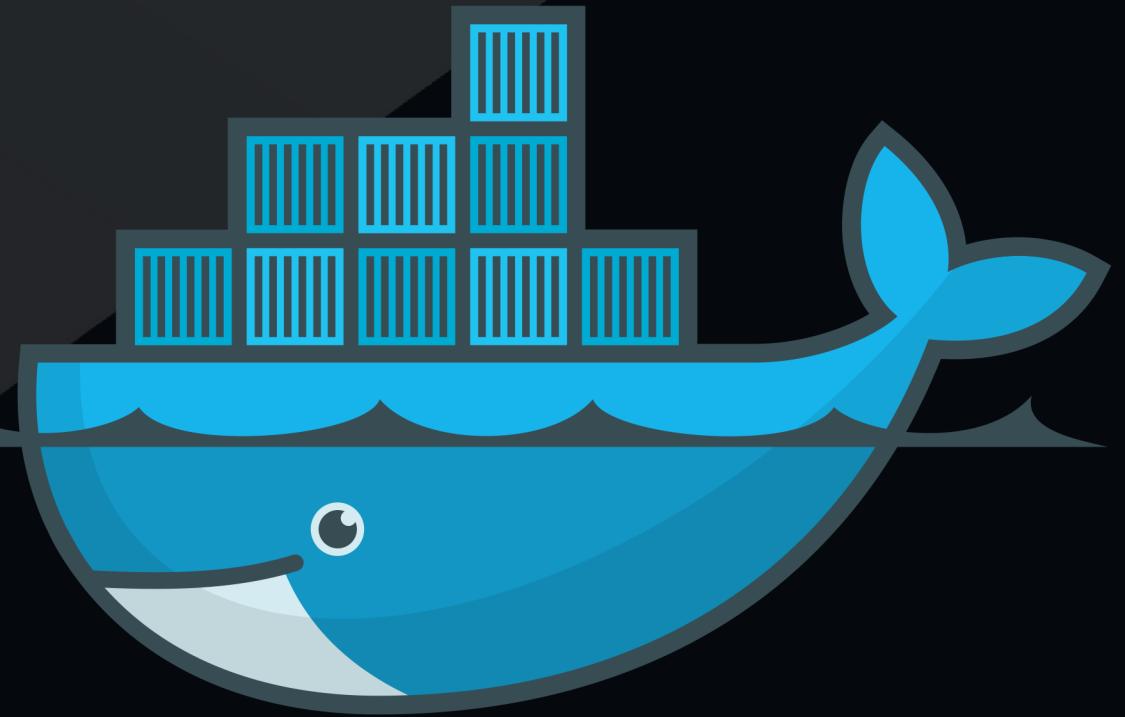
HISTORY & DEPLOYMENTS



<https://kubernetes.io/docs/concepts/overview/>

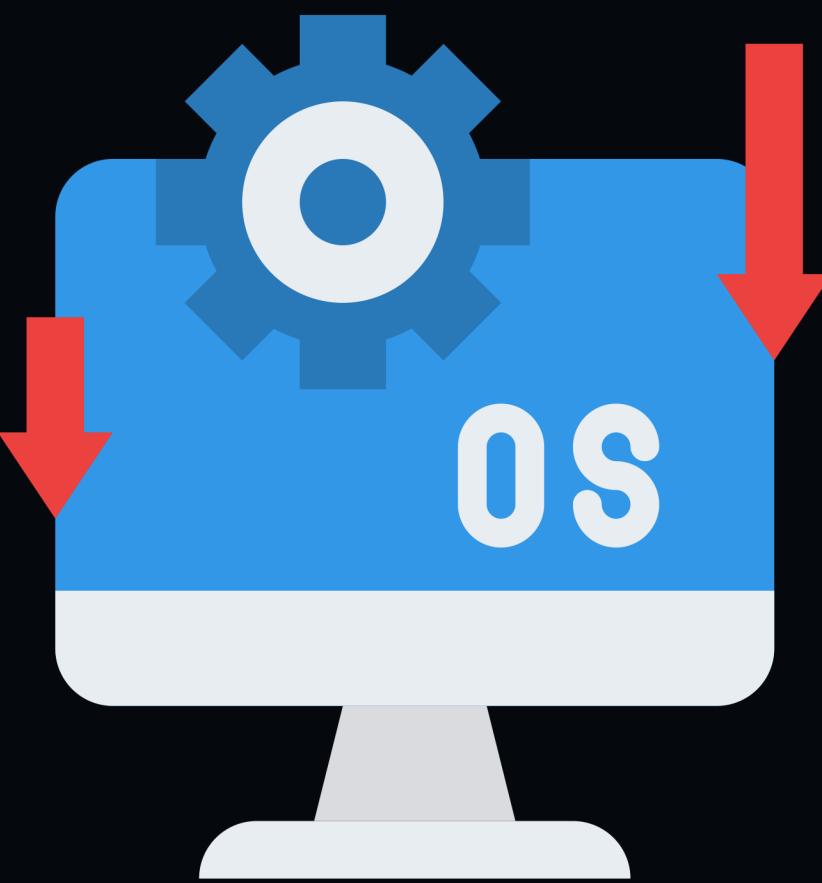
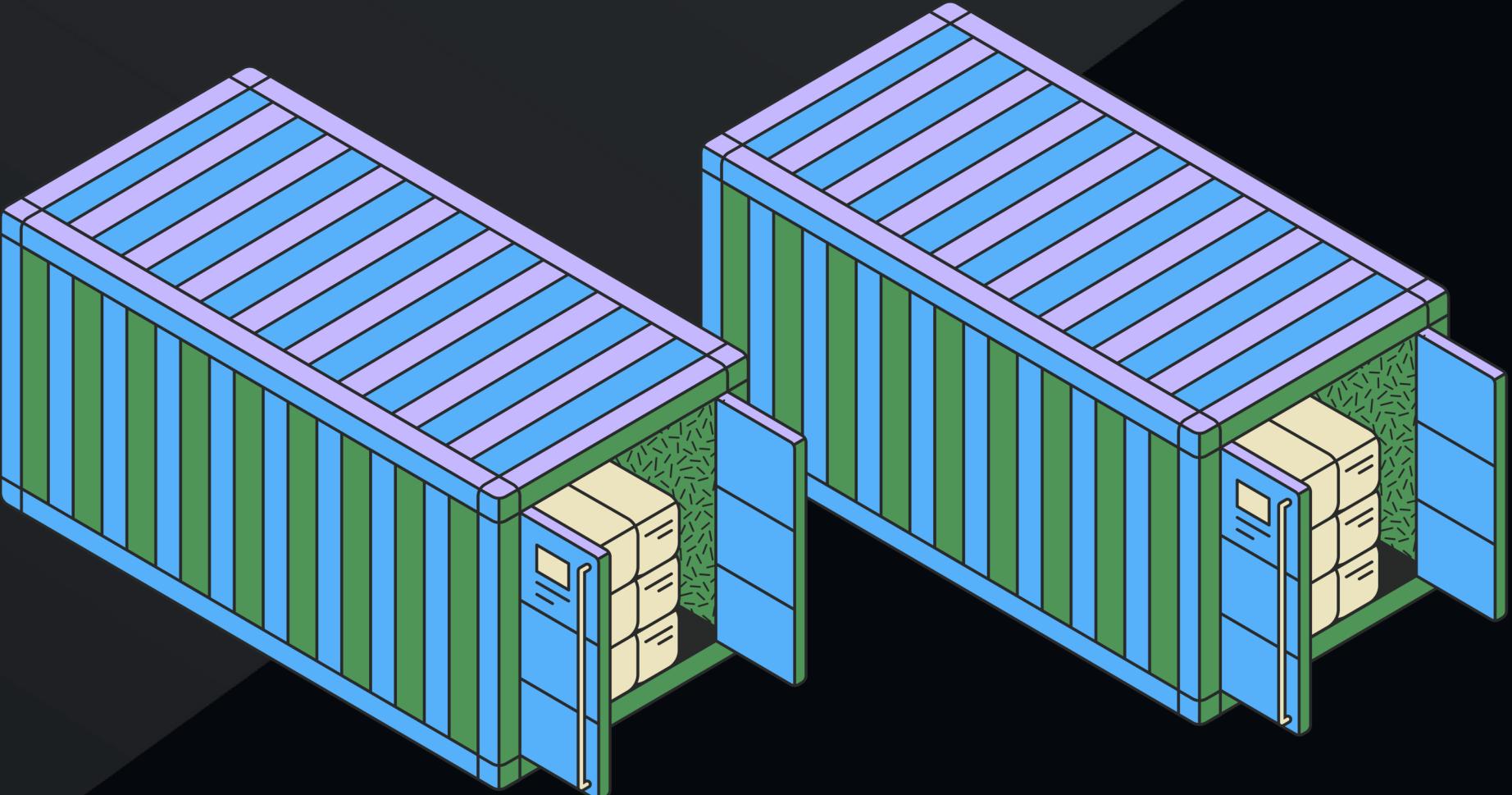
DOCKER

- The most popular container tool
- Install Docker(<https://www.docker.com/>)
- Benefits
 - Same environment across all the developers
 - Consistent develop & production environment
 - OS, Lib version & dependencies
 - Containerizing
 - Environment per project



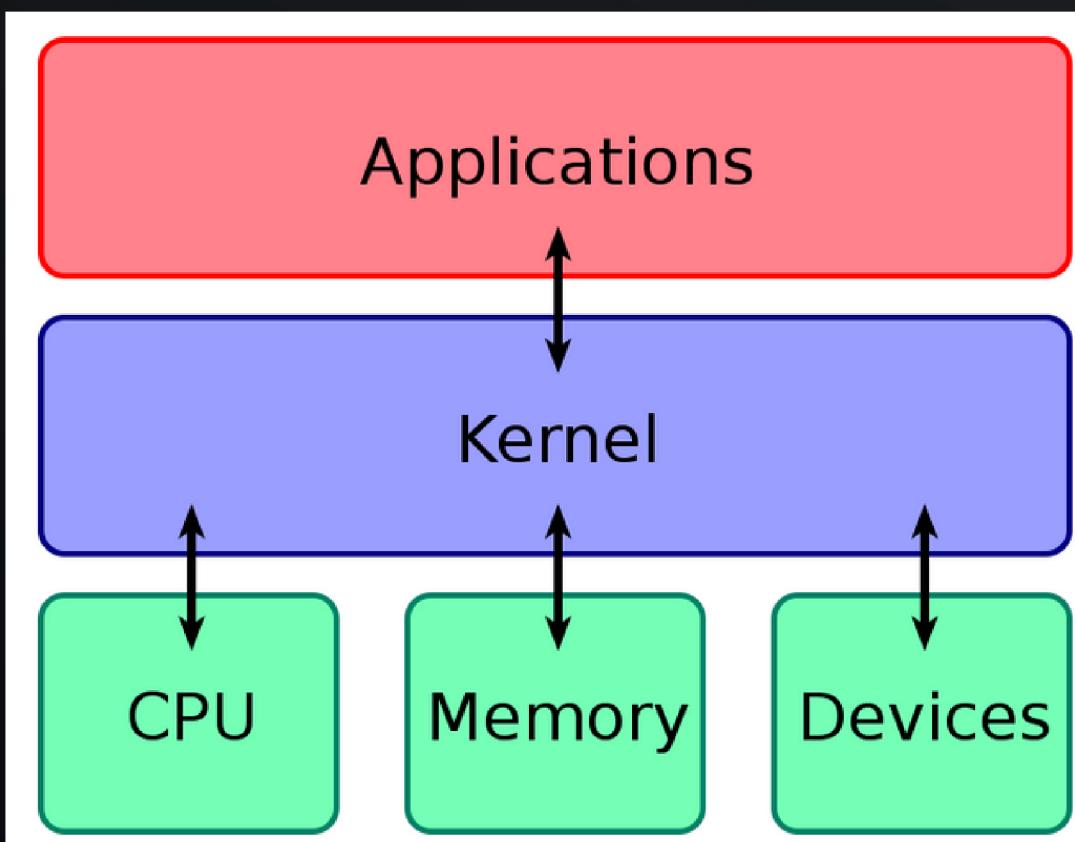
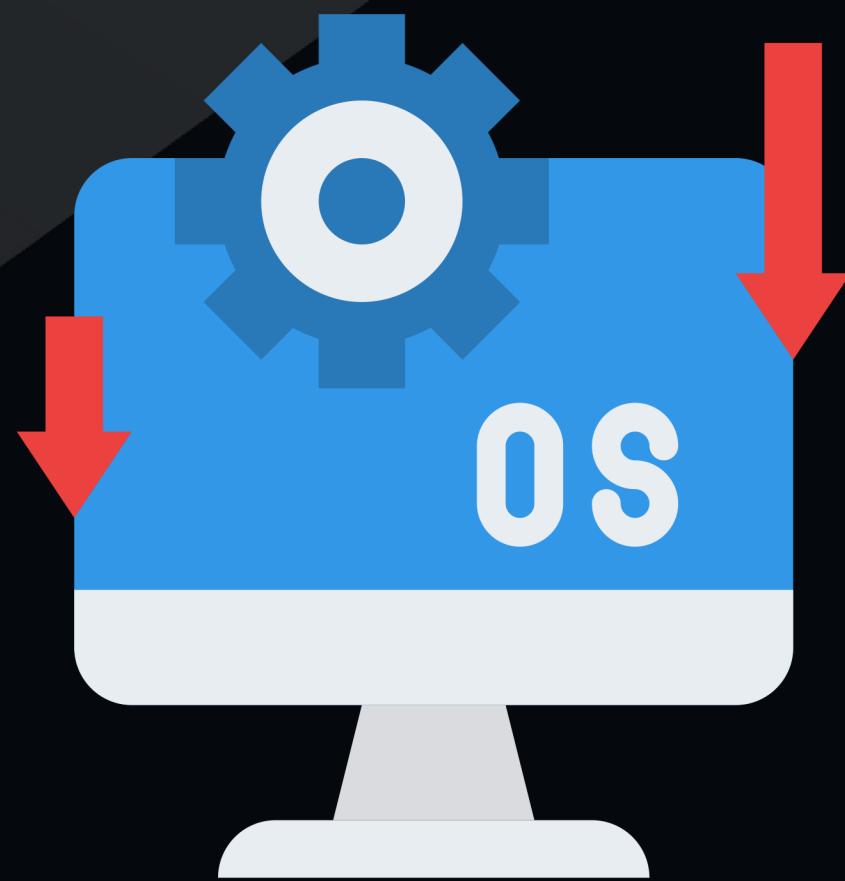
CONTAINER?

- Process: CPU and Memory
- Network: ingress, egress
- Mounts: Disk
- Totally isolated
- But using **shared OS kernel**



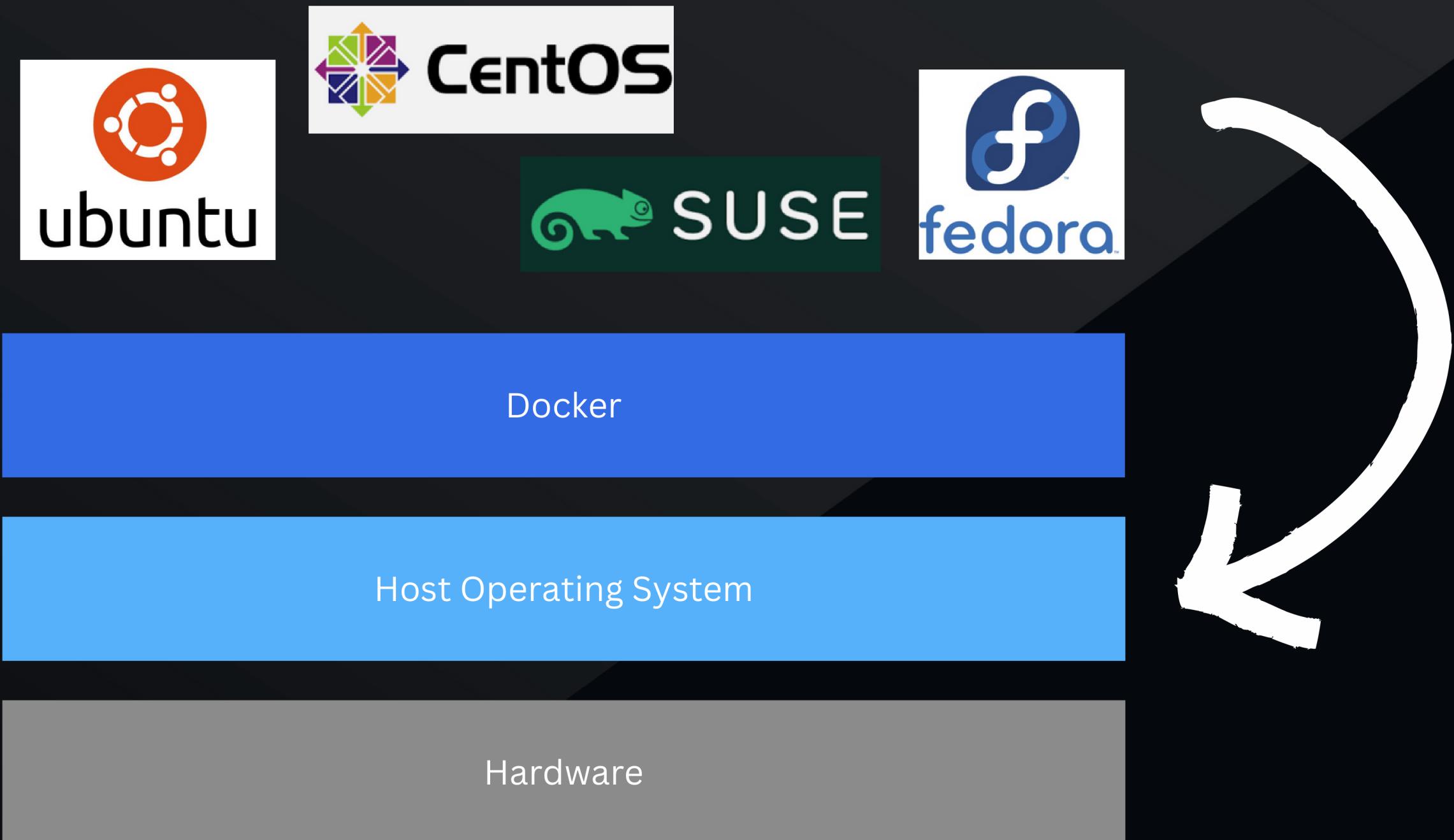
OPERATING SYSTEM

- Ubuntu
- Fedora
- Suse
- CentOS
- they all has **same kernel** from **Linux**
- But **different application**(e.g yum: redhat vs. apt: ubuntu)

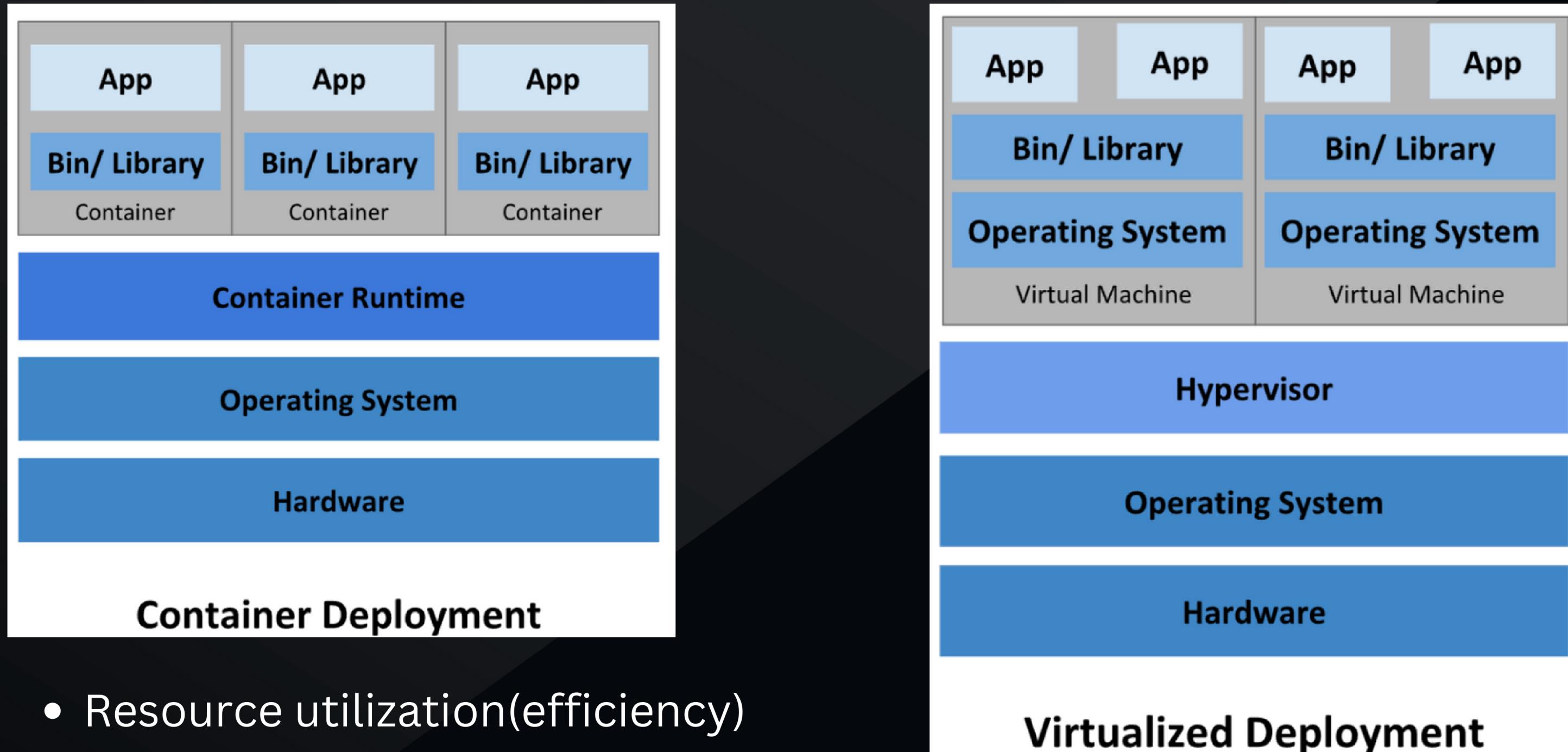


from wikipedia

SHARING KERNEL



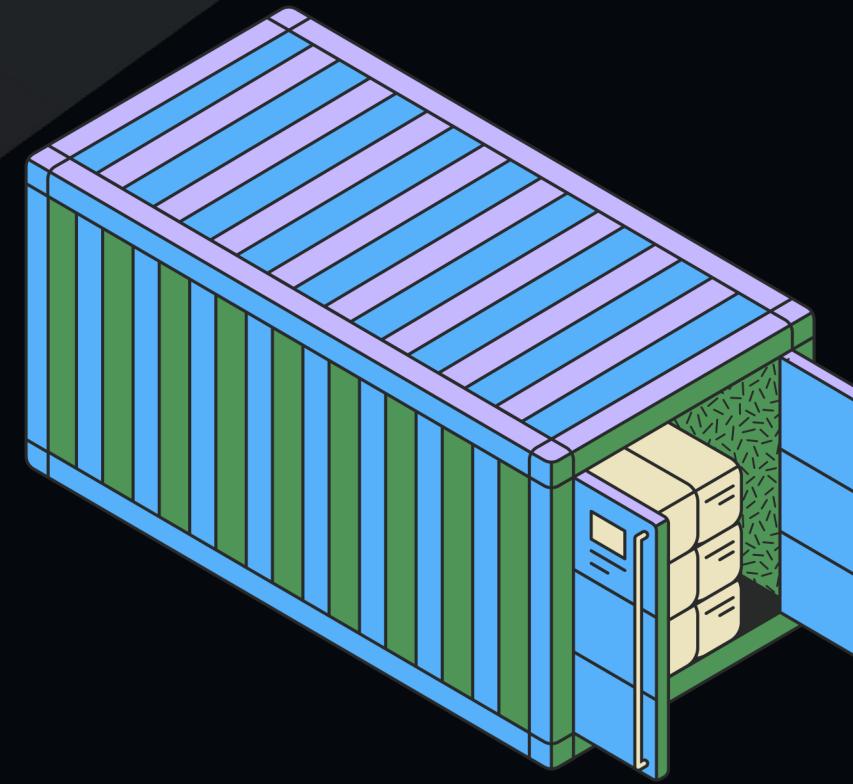
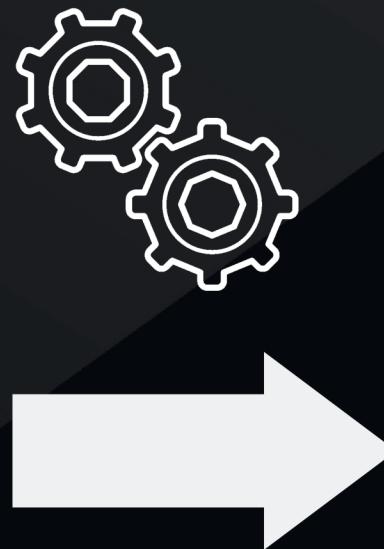
CONTAINERS VS. VIRTUAL MACHINE



- Resource utilization(efficiency)
- Disk usage
- Boot up speed
- Observability

CONTAINERS VS. IMAGE

- Docker image: **immutable** file that contains the source code, libraries and dependencies and others
- The image is **template**, you cannot run or start those
- **Container** is **running instance**



container layer

read / write

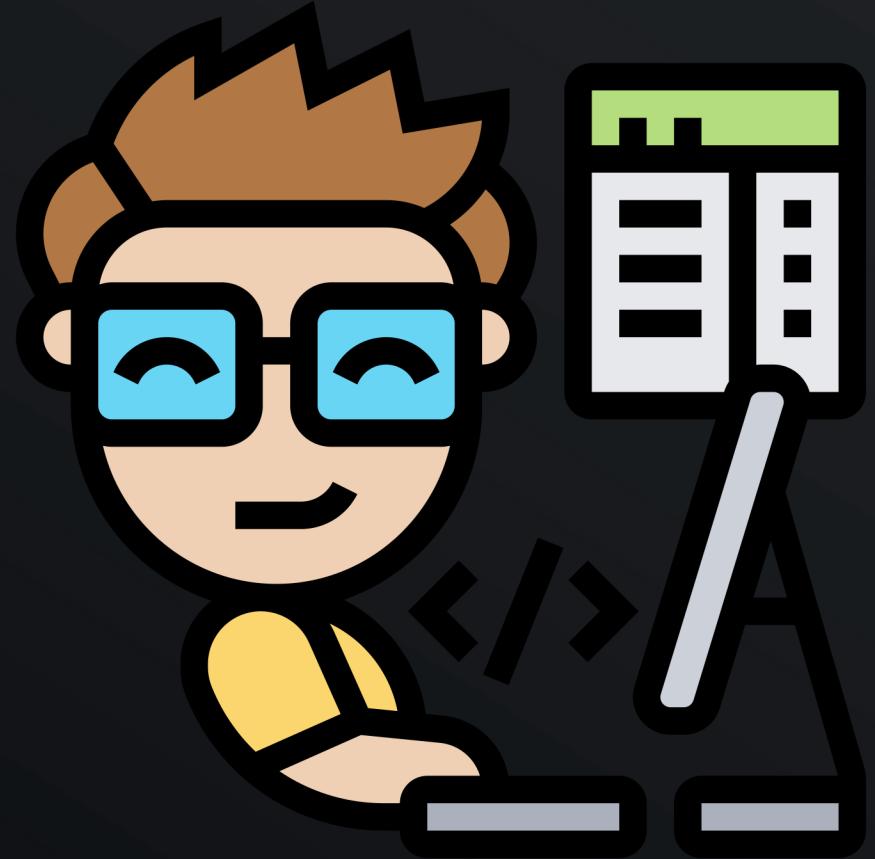
image layer

image layer

image layer

read only

DEPLOYMENT(BEFORE)

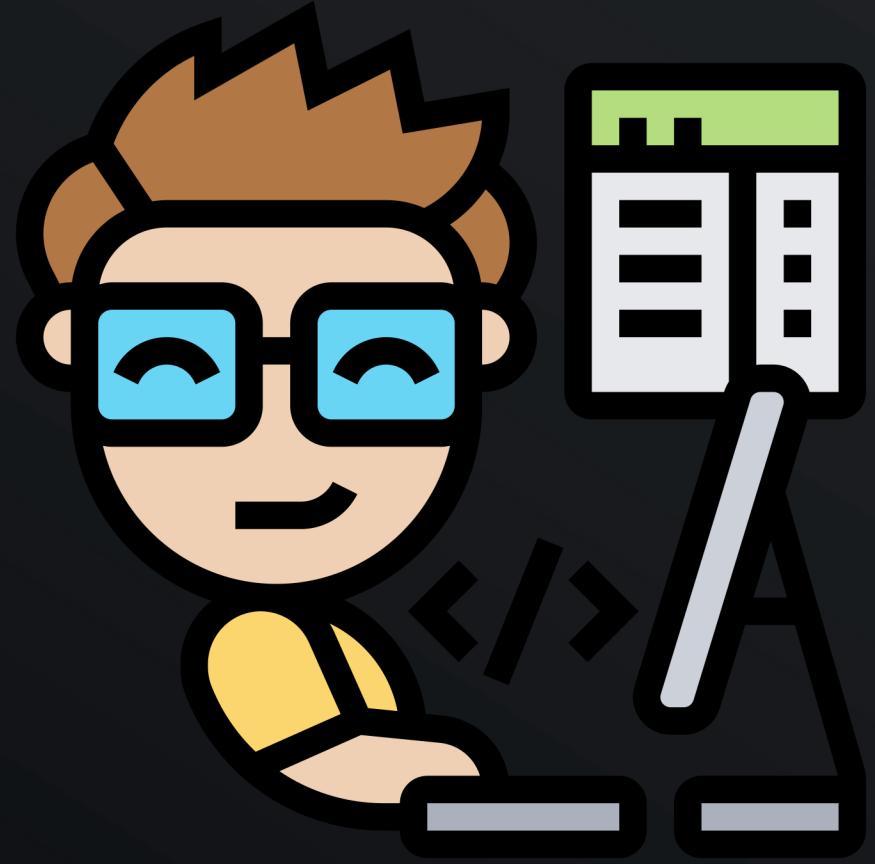


- code
- dependencies
- manual



- deploy based
on the guideline

DEPLOYMENT(AFTER)



- docker image



- deploy the docker image