Containers

Kidane M. Tekle

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Disclarimer!

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Introduction

Container engines

Docker

Summary

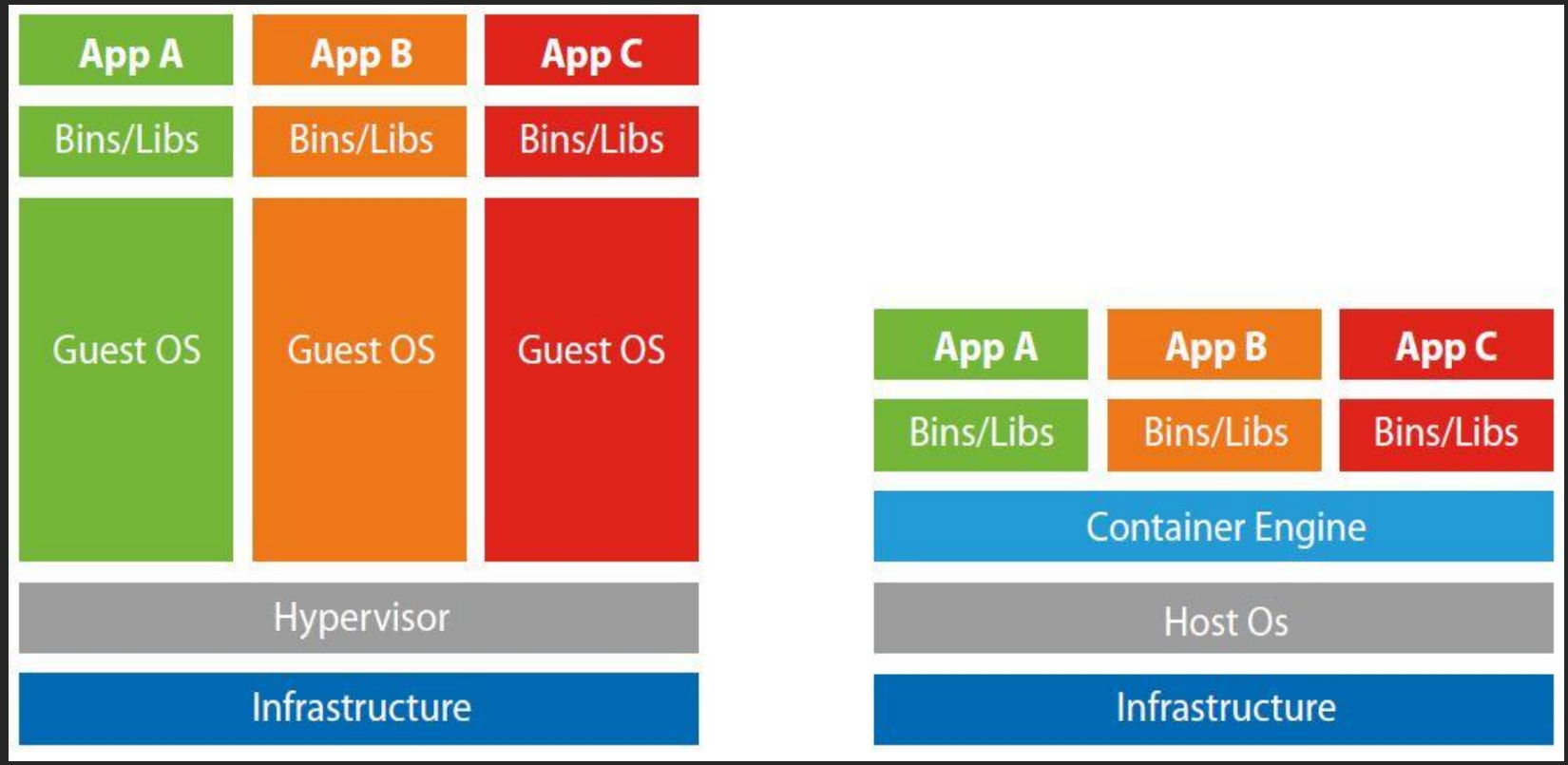
Introduction: Purpose I (resource utilization)

LXC

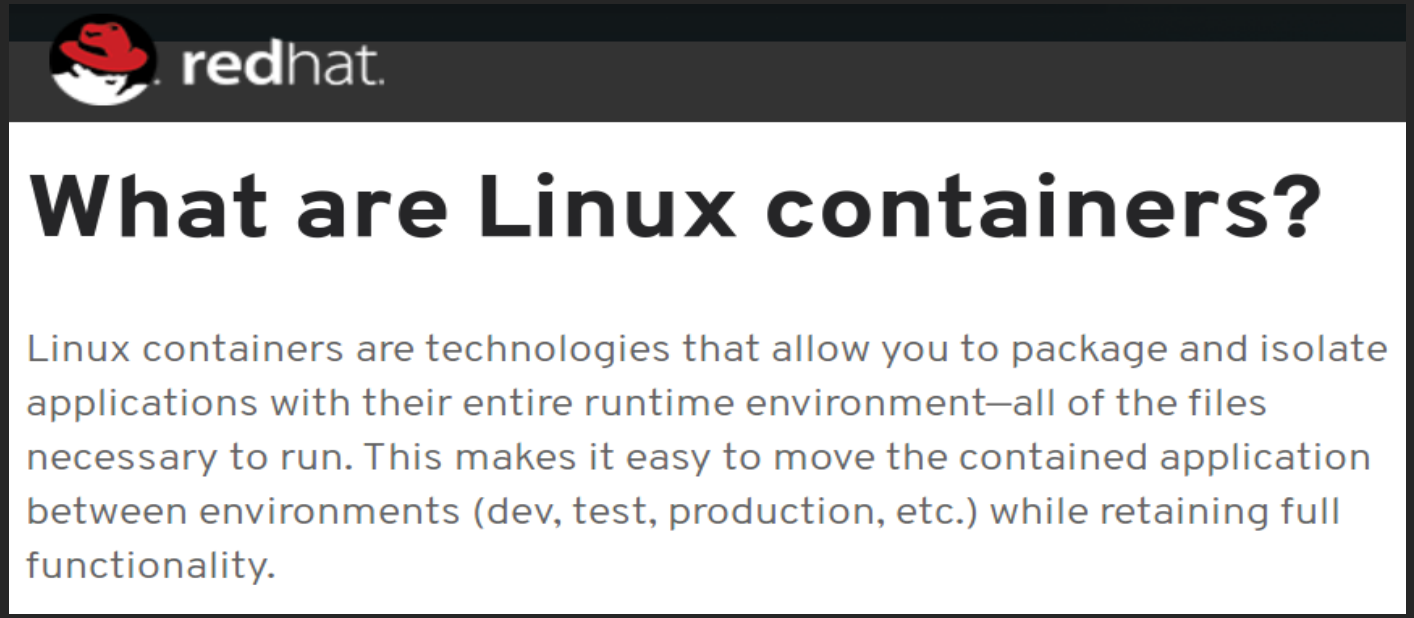
From Wikipedia, the free encyclopedia

LXC (**Linux Containers**) is an operating-system-level virtualization method for running multiple isolated Linux systems (containers) on a control host using a single Linux kernel.

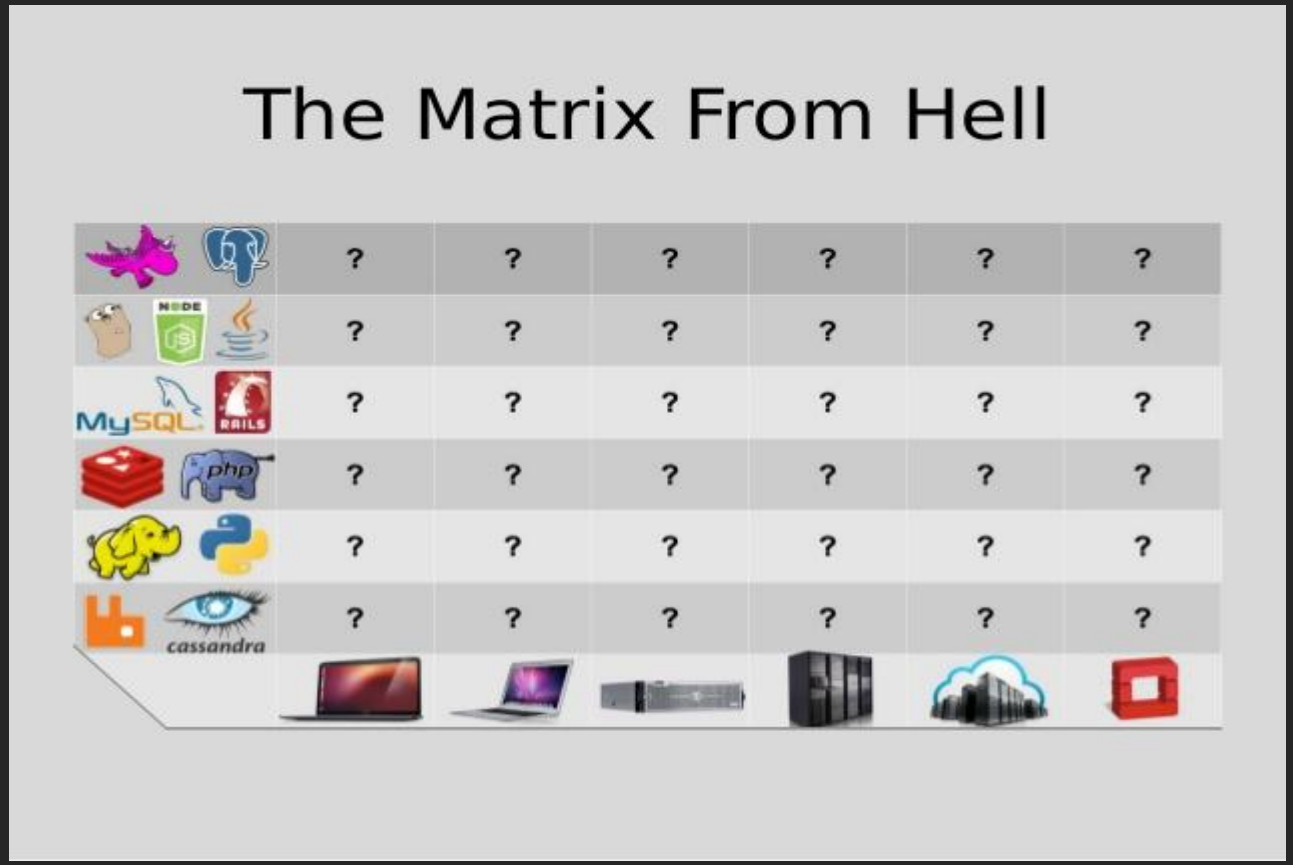
Introduction: Purpose I (resource utilization)



Introduction: Purpose II (packaging & shipping)



Introduction: Purpose II (packaging & shipping)



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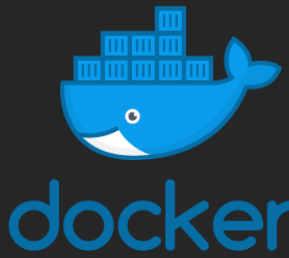
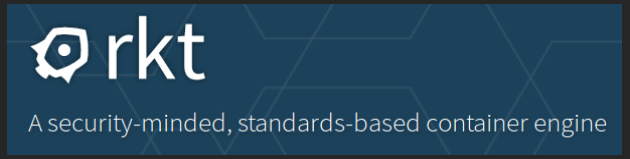
- Key comparison factors
  - Security
  - Ease of use
  - Productivity tools
  - Community adoption
  - . . .
- Docker is currently the De facto!





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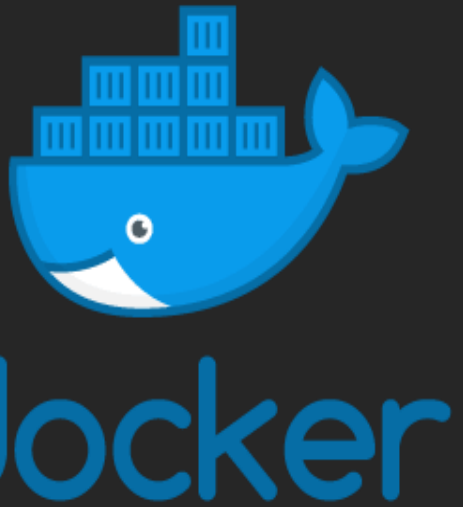


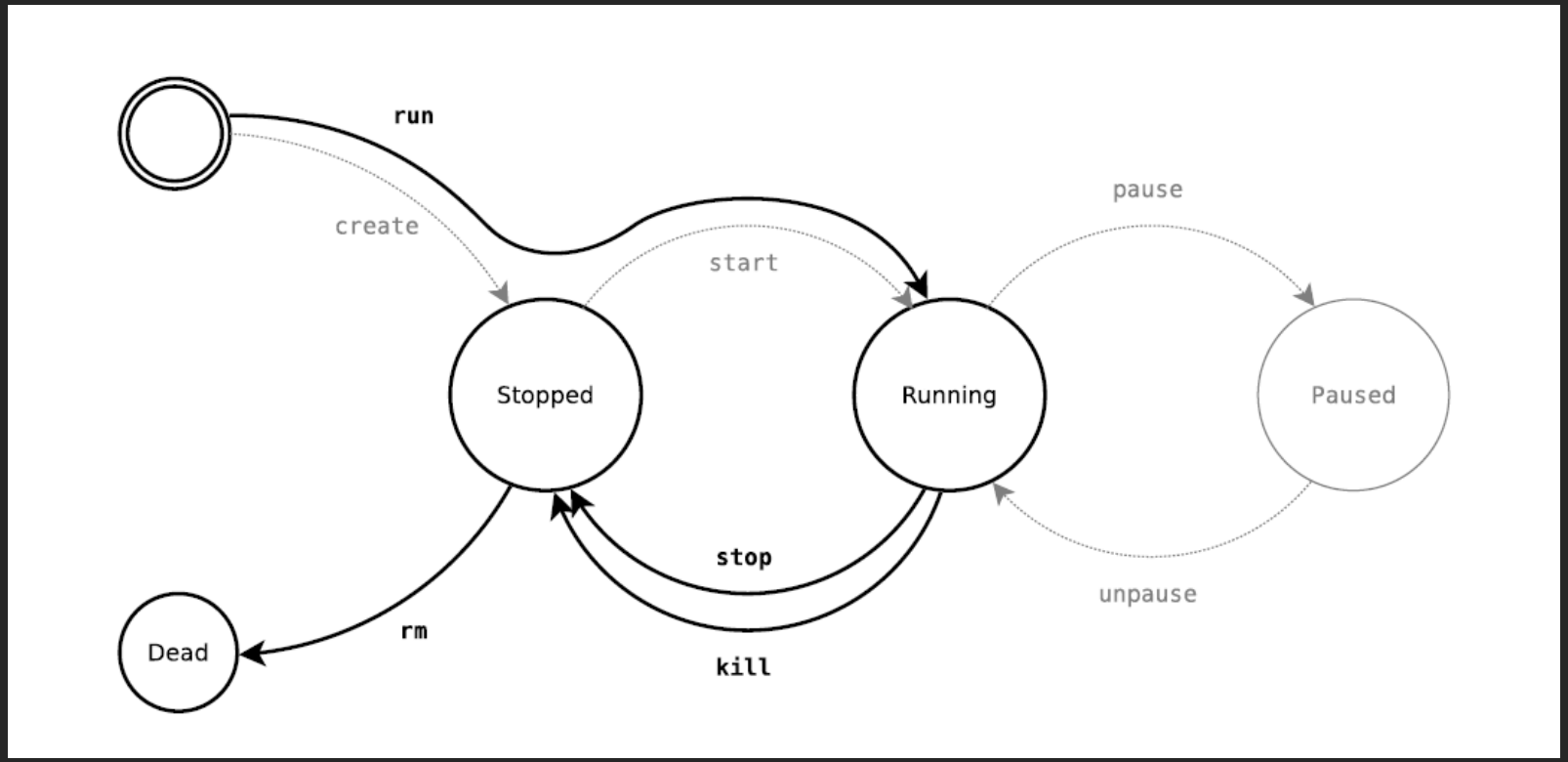
Docker: Basic concepts

- Docker engine
  - A container runtime
  - Needs sudo rights by default
- Images: incrementally updated templates starting from a "base-os"
- Container: running instances based on images
- Docker file: for building images
- Dockerhub: a cloud service for sharing docker images and recopies

Docker: Getting started

- Installation (https://docs.docker.com/install/)
  - $ sudo apt install docker.io (or equivalent)
- Easy runs
  - $ docker search ‘something’ #searches dockerhub by default
  - $ docker run hello-world
  - $ docker images
  - $ docker ps -a

Docker: Life cycle of a container



Docker: More . . .

- interactive
  - $ docker run -t -i debian bash
  - $ whoami
- inspection
  - $ docker ps [-a]
- garbage collection
  - $ docker ps -a
  - $ docker rm $(docker ps -aq) – caution!
  - $ docker images
  - $ docker rmi image:name
- dig more . . . (http://people.irisa.fr/Anthony.Baire/docker-tutorial.pdf)

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