Kubernetes 101

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OLEG FIKSEL (DOCKER FUNDAMENTALS)

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- DevOps Engineer
- Passionate about tech
- Like to automate everything

Michael Siebertz
(Kubernetes Fundamentals + Live Demo)

MICHAEL SIEBERTZ (KUBERNETES FUNDAMENTALS + LIVE DEMO)

- DevOps Engineer
- Passionate about tech (IT / Car)
- Trying to automate as much as possible
- Part of Central DevOps Team

MOTIVATION

Our motivation to do this talk

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Provide an overview of container architechture on the example of Docker and Kubernetes.

AGENDA

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- Docker Fundamentals

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- Kubernetes Fundamentals

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- Roadmap from KubeCon 2019

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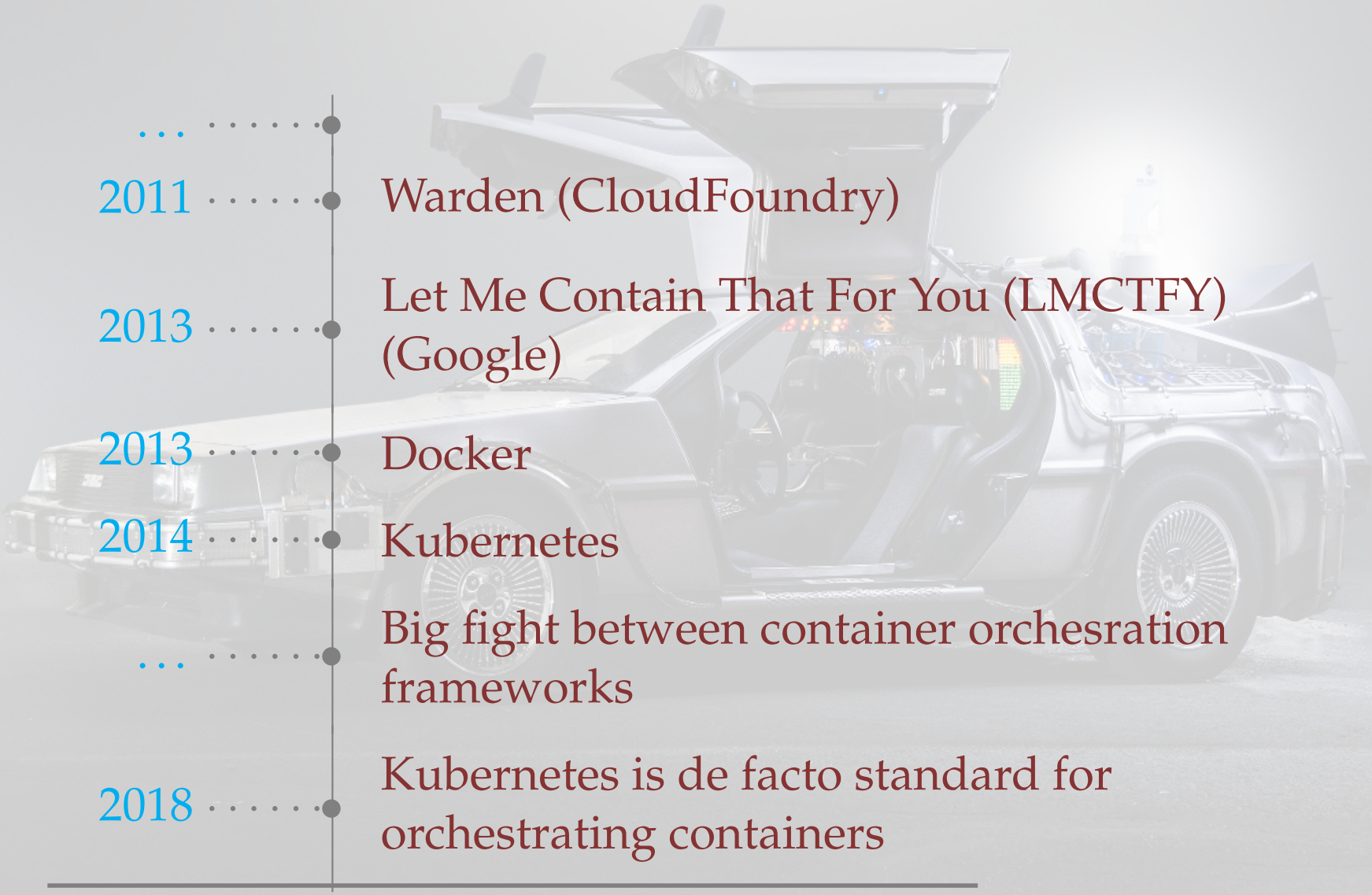
Docker fundamentals

A BIT OF HISTORY

A BIT OF HISTORY 1/2

- 1979 — chroot
- 2000 — FreeBSD Jails
- 2001 — Linux VServer
- 2004 — Solaris Containers
- 2005 — OpenVZ
- 2006 — Process Containers (Google)
- 2008 — LXC
- ... —

A BIT OF HISTORY 2/2



- ...
- 2011 — Warden (CloudFoundry)
- 2013 — Let Me Contain That For You (LMCTFY) (Google)
- 2013 — Docker
- 2014 — Kubernetes
- ... — Big fight between container orchesration frameworks
- 2018 — Kubernetes is de facto standard for orchestrating containers

VMs and Containers

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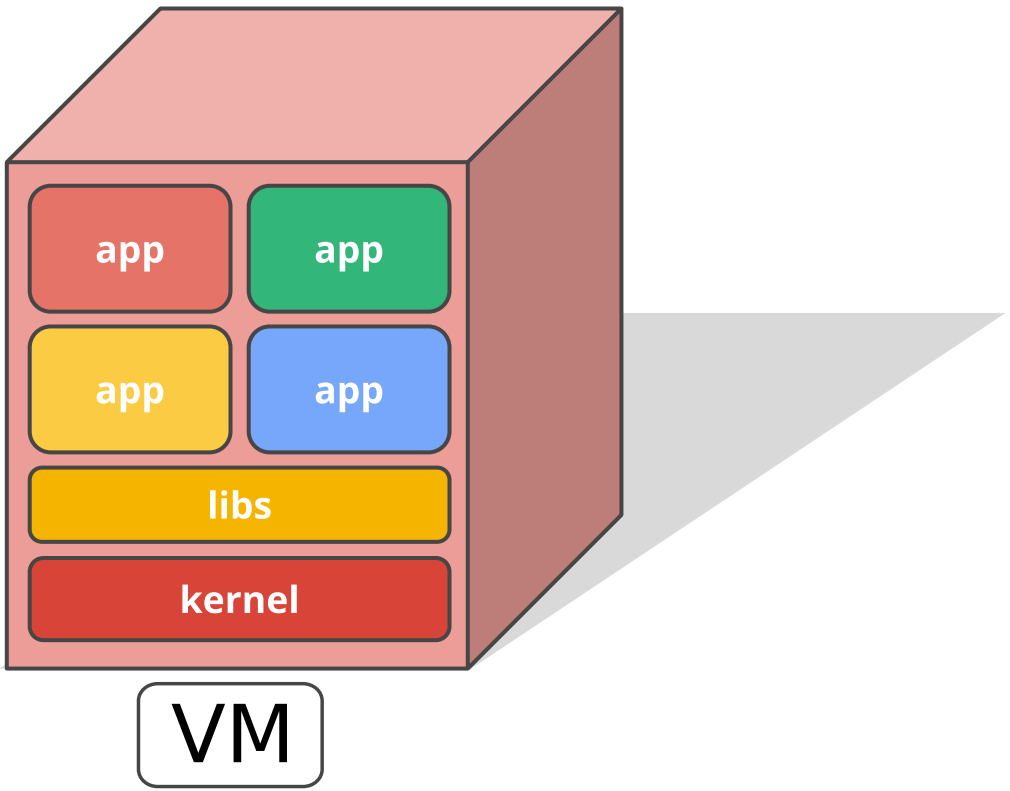

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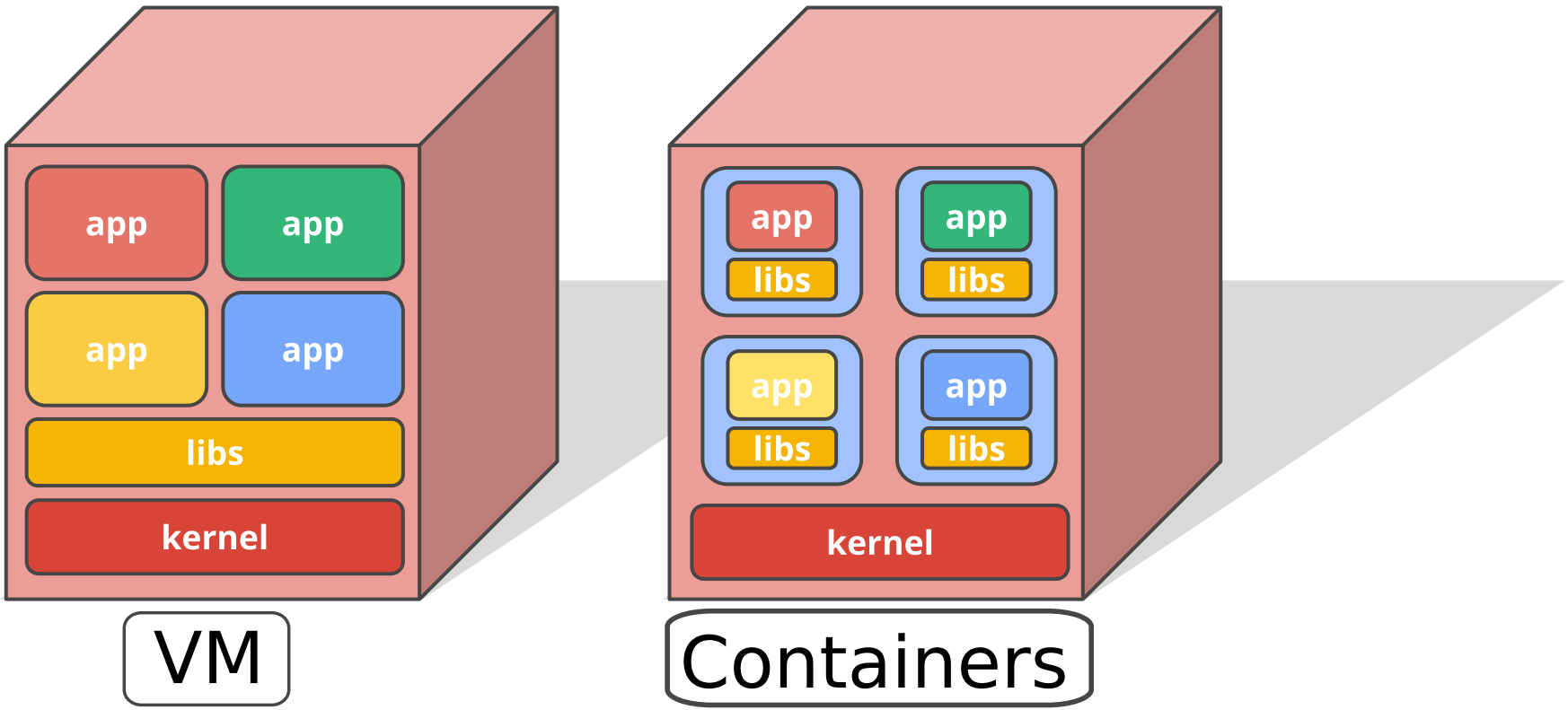

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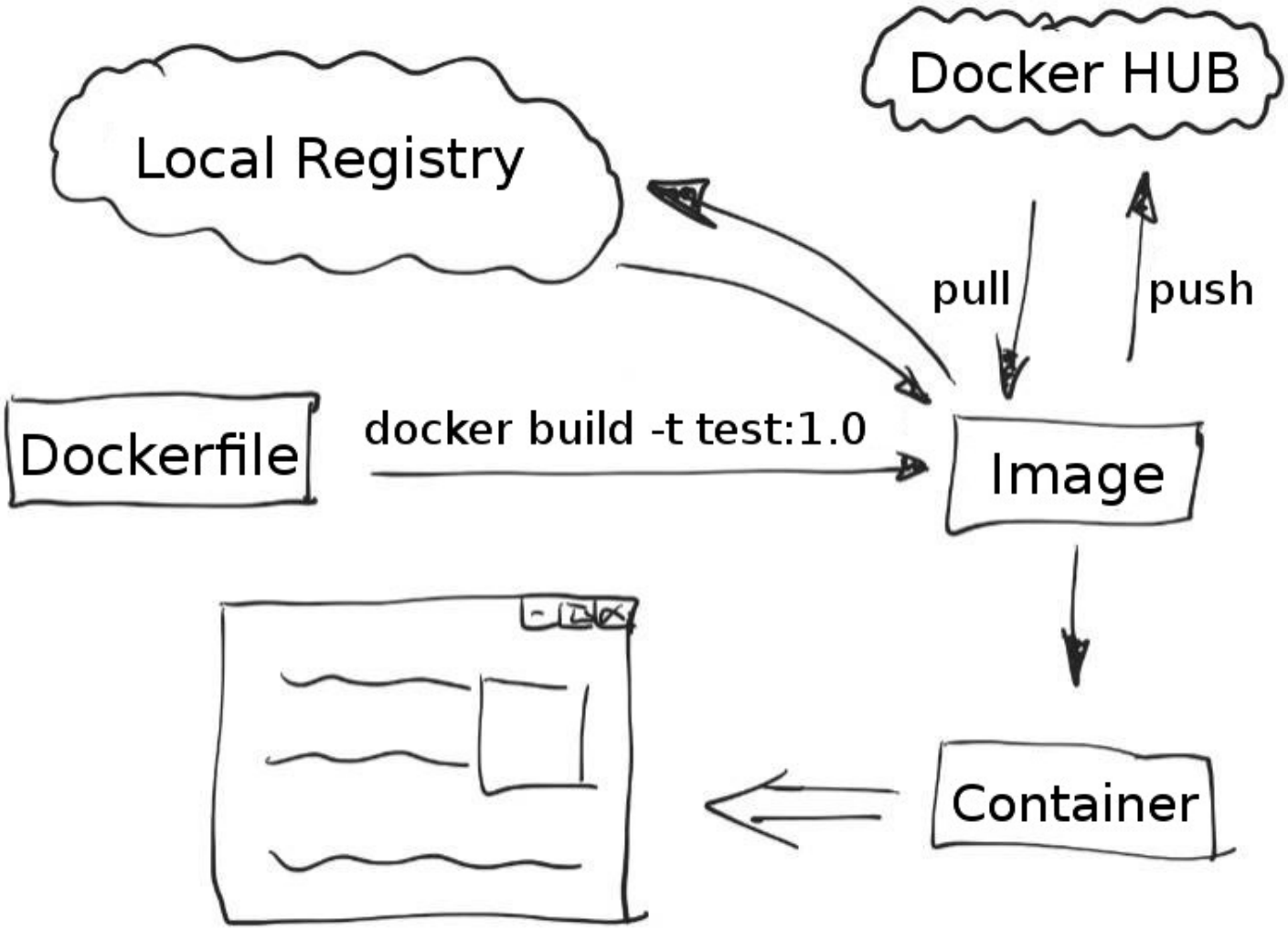

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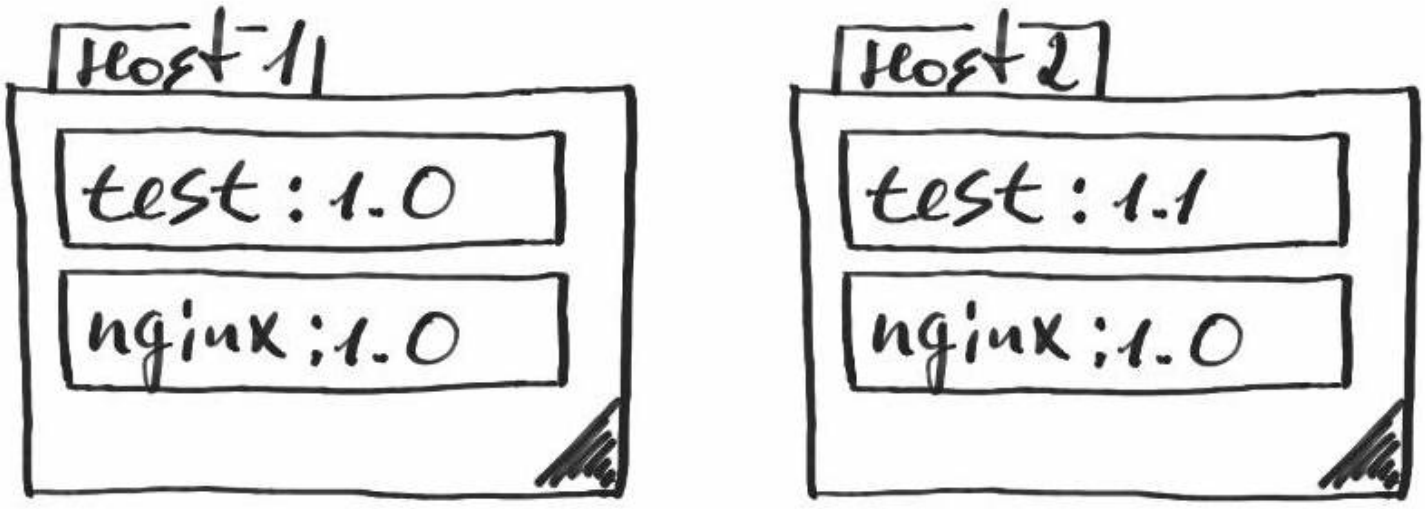

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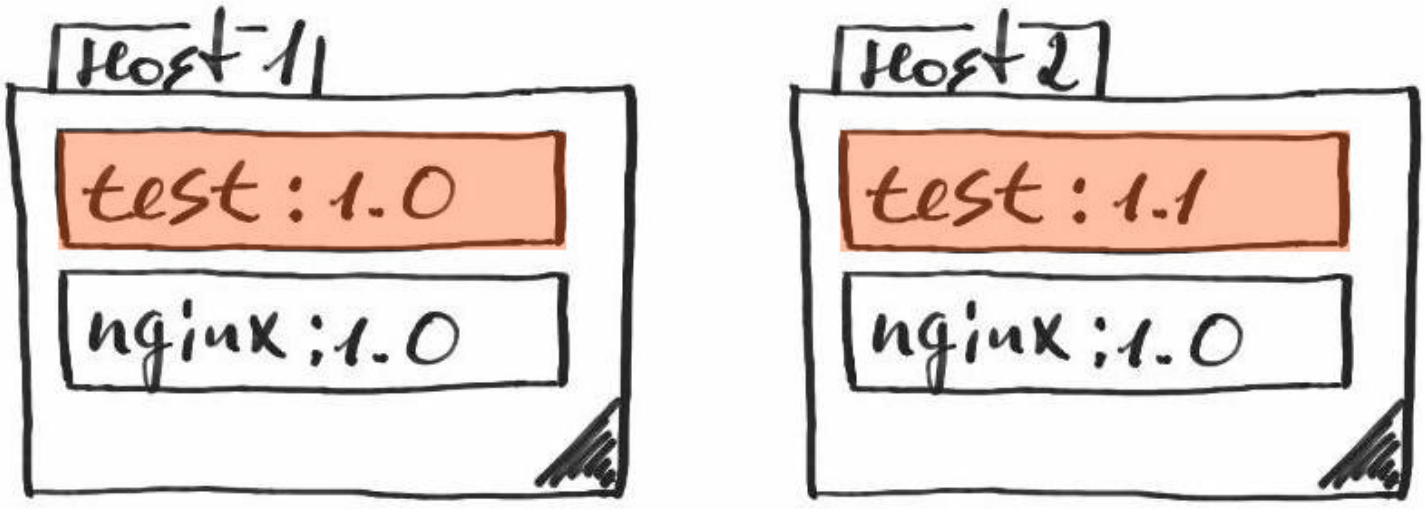

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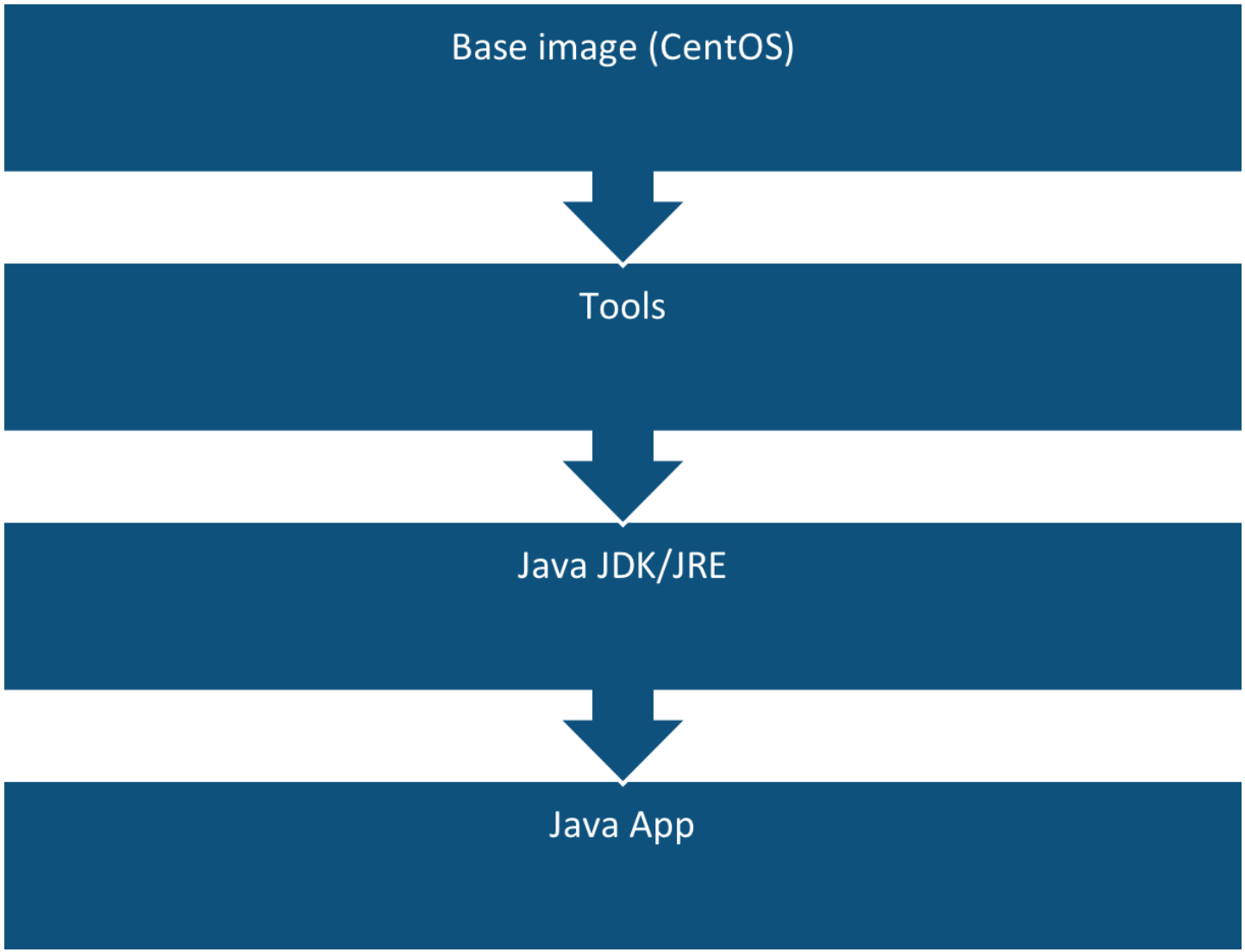

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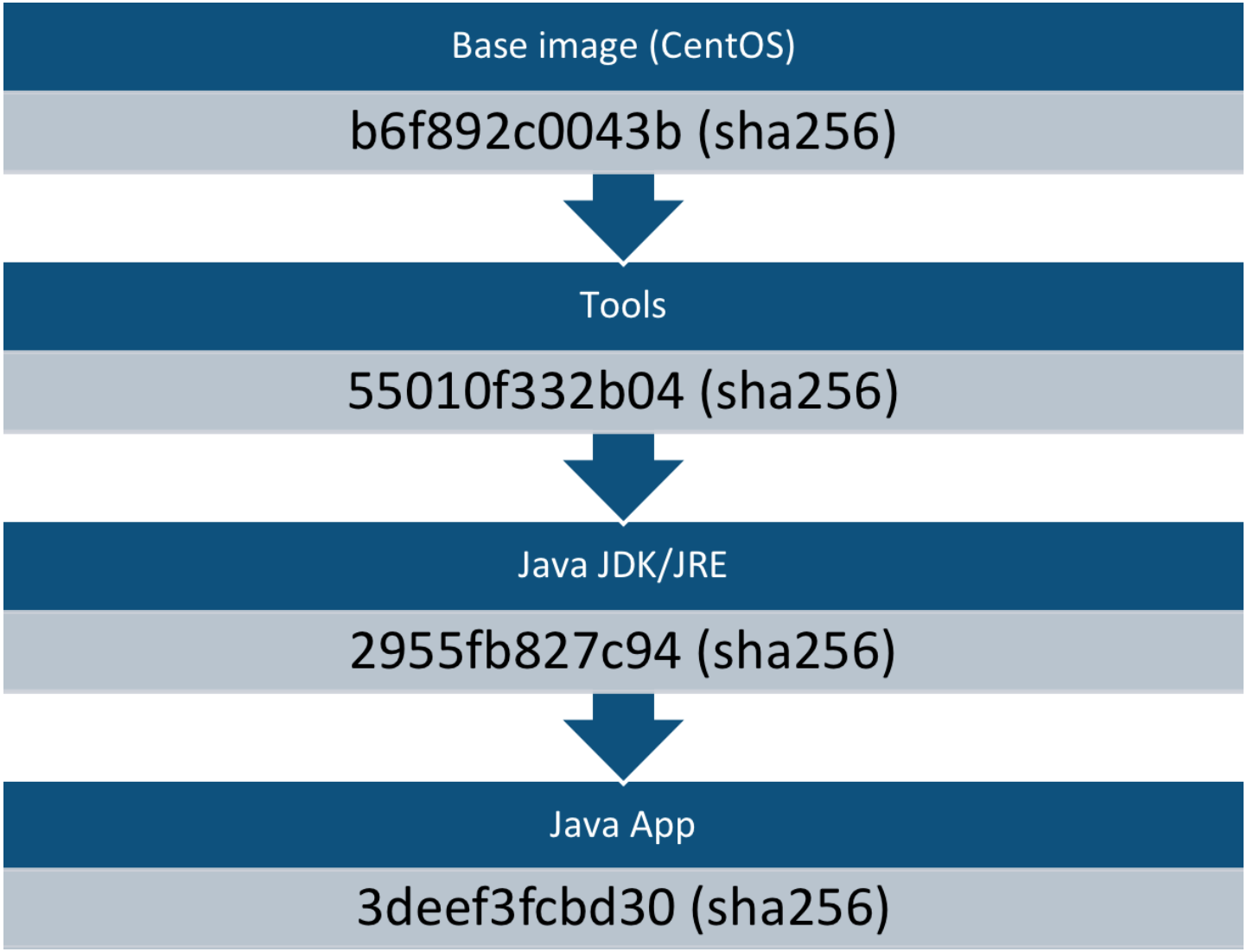

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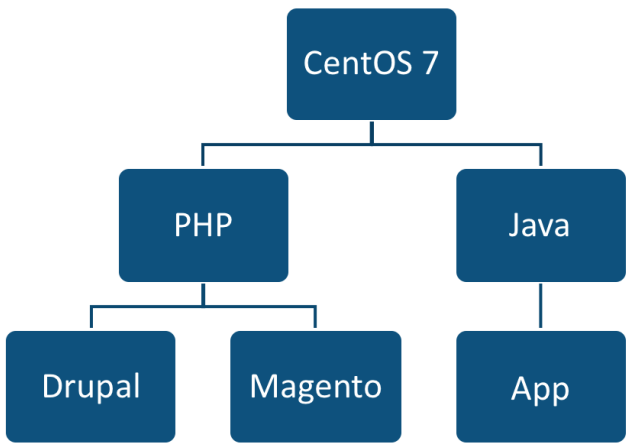

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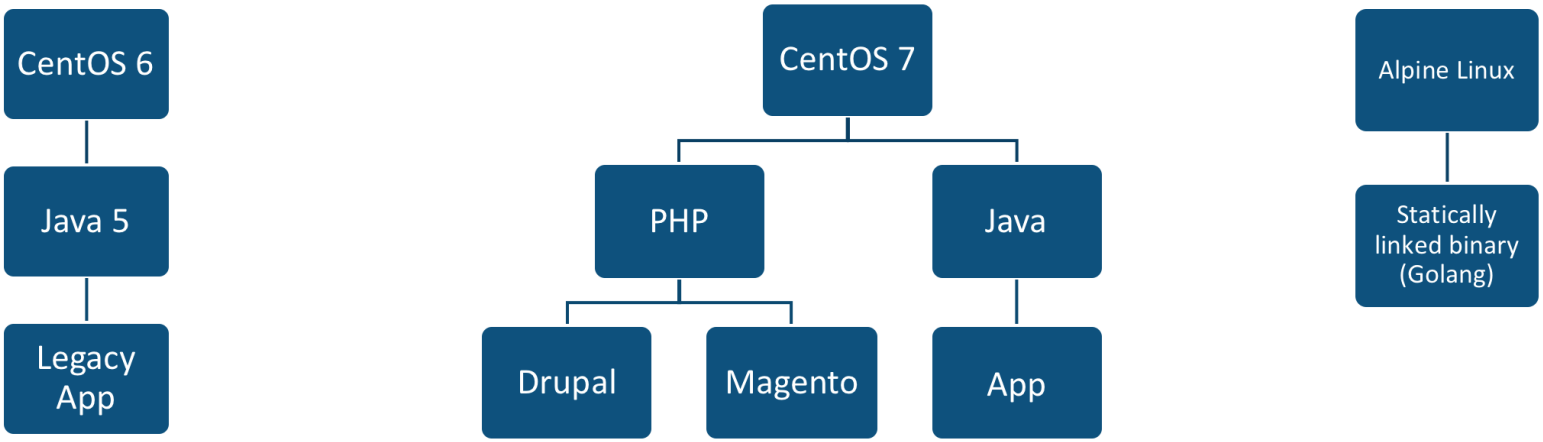

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- aufs (legacy)
- overlayfs (legacy)
- devicemapper
- overlayfs2
- btrfs

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  - process isolation
    Each container "thinks" it's the only one in the system
    (*ps uax*)

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- Docker is the standard de facto (for now) for running containers
- Docker alone is not enough to run containers big time

NEXT UP

Kubernetes Fundamentals