Introduction to Docker

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Agenda

- Docker
- History
- What is Docker?
- Container
- Docker Install
- Hands On

Docker

History

- Solomon Hykes started Docker as an internal project within dotCloud
- Docker was released as open source in March 2013
- As of April 13, 2015, the project had over 20,700 GitHub stars, over 4,700 forks, and nearly 900 contributors
- A May 2015 analysis showed the following organizations as main contributors to Docker: Docker Team, Red Hat, IBM, Google, Cisco Systems, VMware, CoreOS and Amadeus

What is Docker?

- Docker is an open platform for developing, shipping, and running applications.
- Docker does this by combining a lightweight container virtualization platform with workflows and tooling that help you manage and deploy your applications.
- Docker provides a way to run almost any application securely isolated in a container.
- Use of several Linux kernel features to deliver the functionality we've seen: Namespaces, Cgroups, Union file systems ...

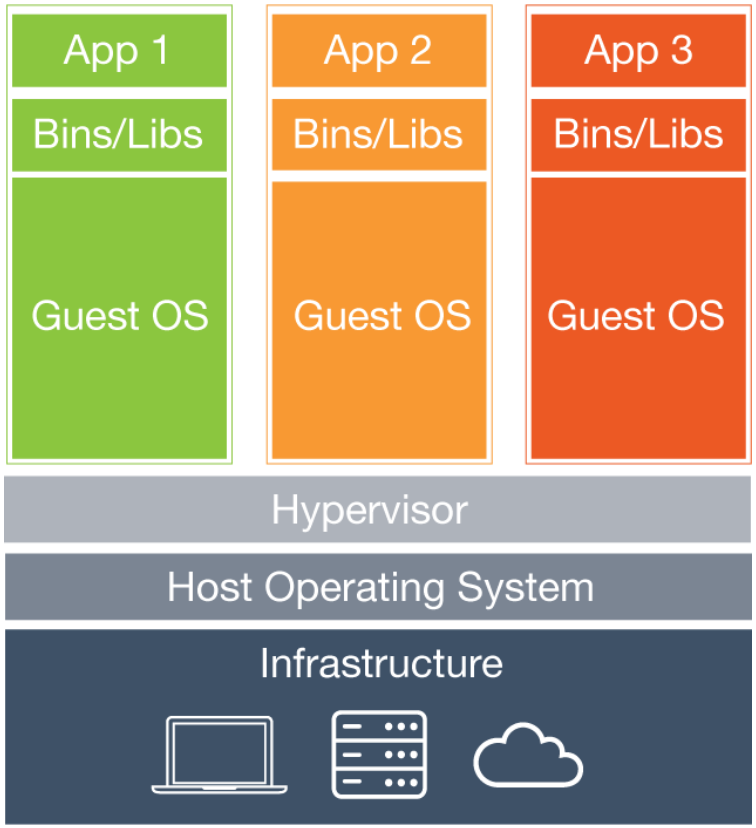
Containers

- Operating-system-level virtualization
- Containerized applications share a common operating system kernel, eliminating the need for each instance to run on its own separate operating system.
- Containers Now Offer the Same Features as VMS, but with Minimal Overhead
- But it’s important to remember that they are not virtualization

How is this different from virtual machines?

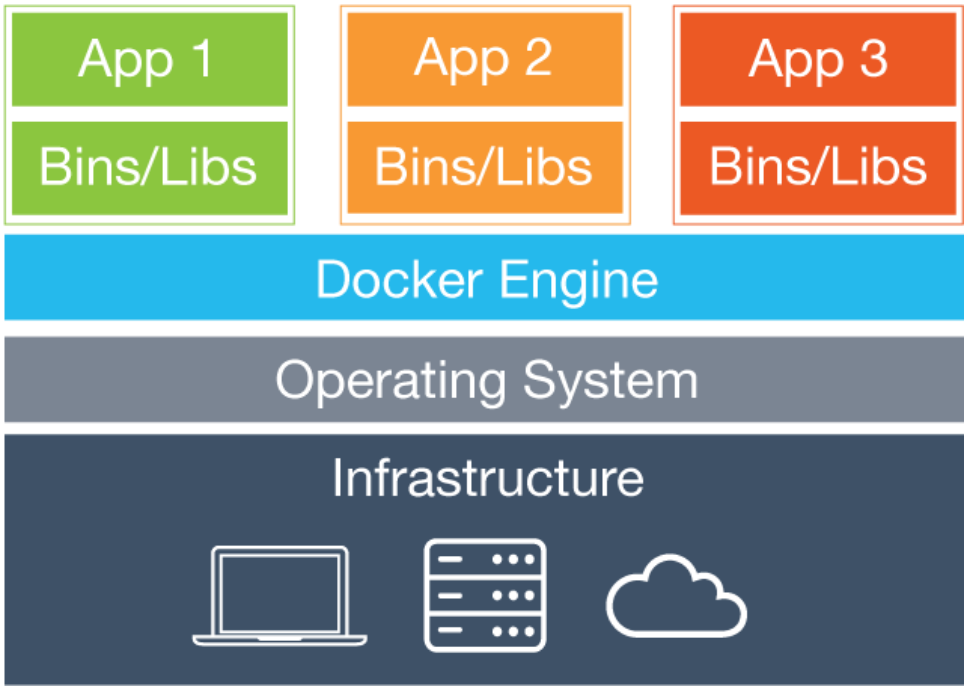
Virtual Machines

- Virtualization emulates the guest system, translating each and every instruction between the guest and host.
- A hypervisor (xen, vmware, etc) manages this process

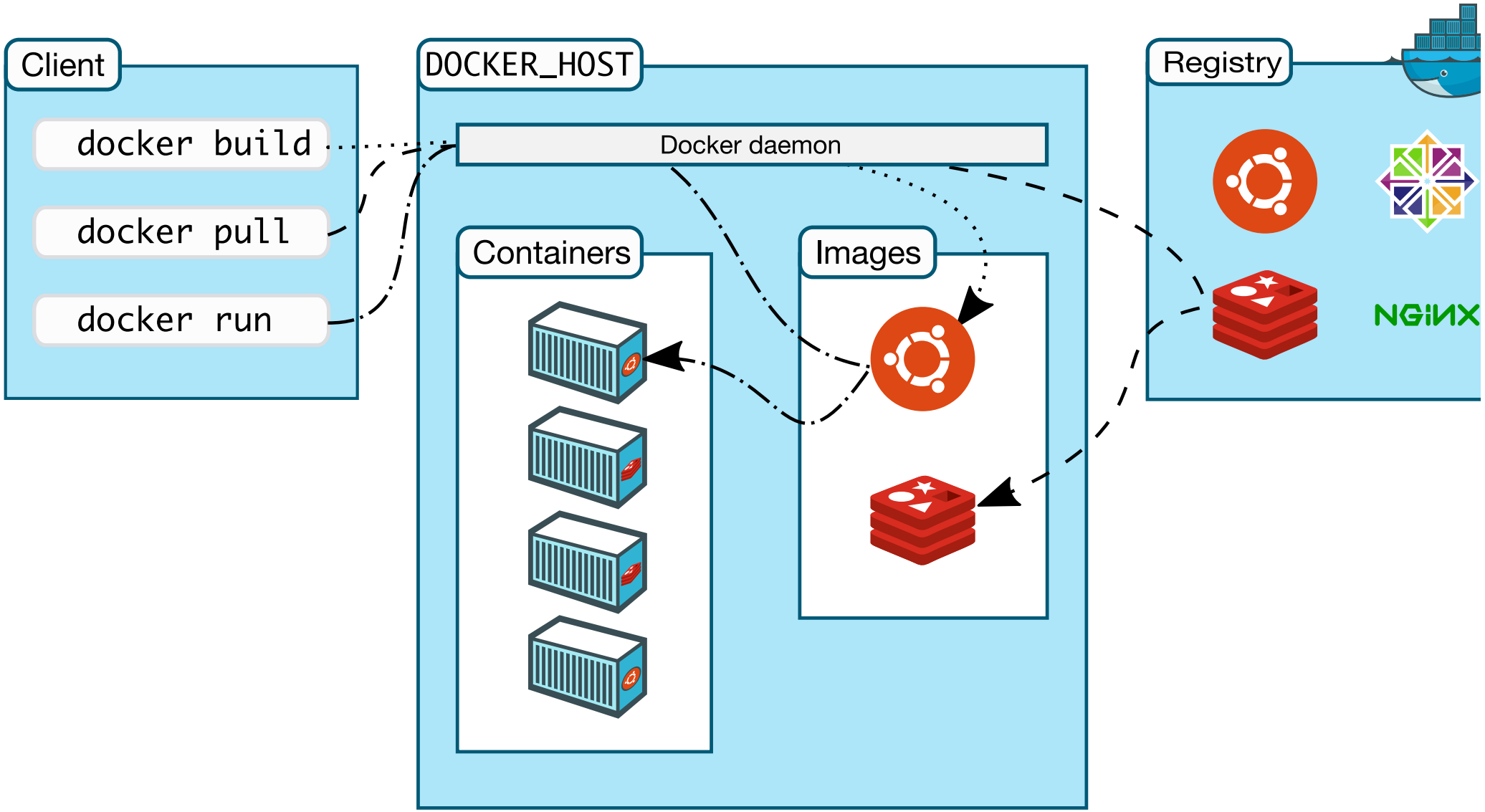


Docker Container

- Linux containers, on the other hand, share the kernel and execute instructions on the host directly
- Only allows Linux “guest” operating systems



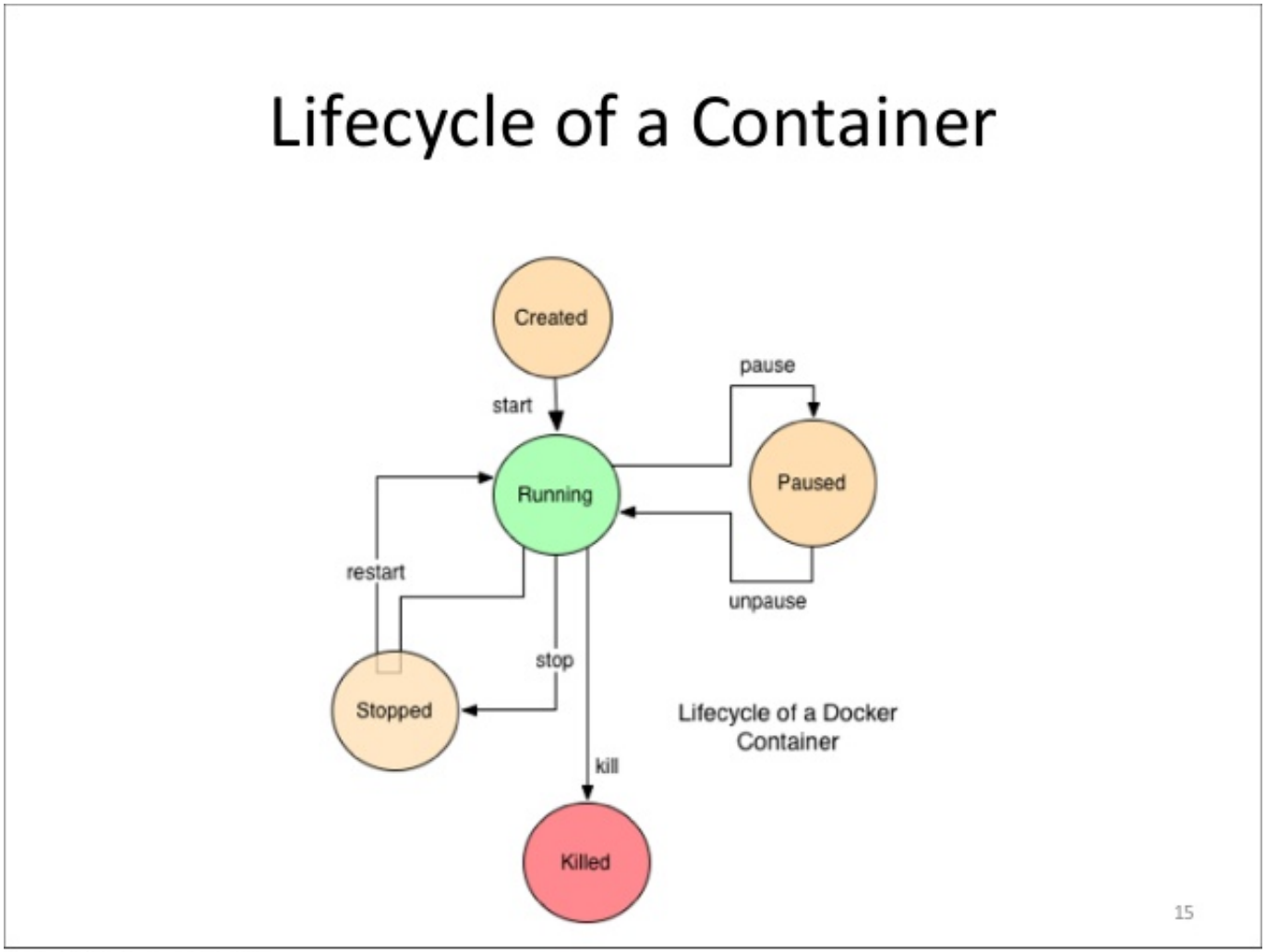
Architecture



Inside Docker

- Docker Images
- Docker Registry
- Docker Containers
- Dockerfile

Docker Container Lifecycle



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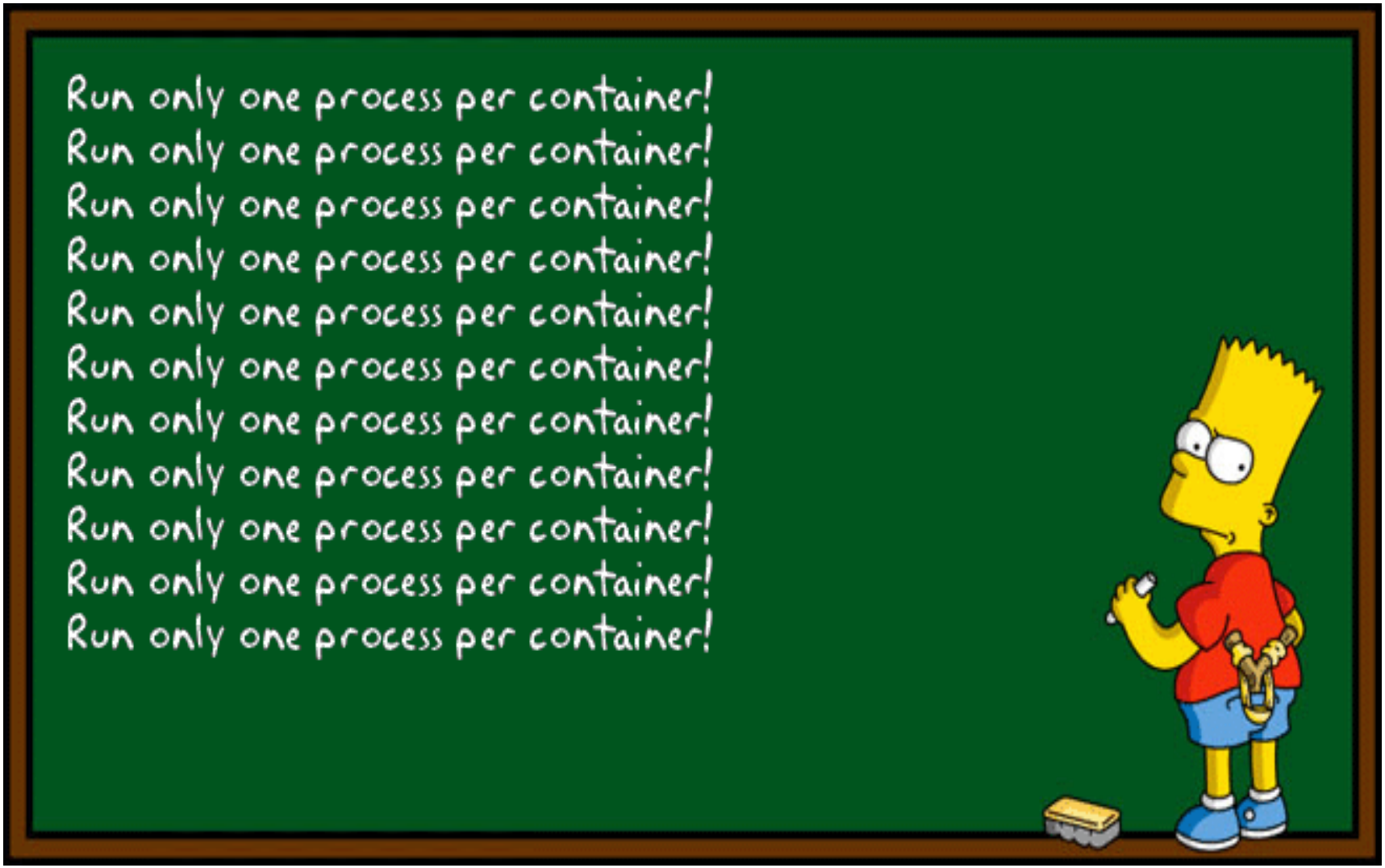
Run only one process per container!



Only one process per container?

docs.docker.com/articles/dockerfile_best-practices/ (https://docs.docker.com/articles/dockerfile_best-practices/)

Install

docs.docker.com/installation/#installation (https://docs.docker.com/installation/#installation)

Docker Hands On

Thank you

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