

Technology Innovation Hub



Docker



Build, Ship, Run, Any App Anywhere

Build , Ship and Run



Build, Ship, Run, Any App Anywhere

From Dev



To Ops



Any App



Microsoft
ASP.NET

.NET



MORE

CONTAINERIZATION ENGINE

Any OS



Windows



Linux

AnyWhere



Physical



Virtual



Cloud

What is it ?



An Open Platform to Build, Ship, and Run Distributed Applications

- ❑ It's an improved, user-friendly Linux Container technology
- ❑ Easy, human readable mechanism to build containers images based on recipes, aka Docker files
- ❑ Networking , memory, CPU, and file system boundaries for process
- ❑ Images for containers can be easily shared and extended
 - Container file system is layered , deltas used with copy-on-write
- ❑ Extremely fast adaptations by developers
- ❑ Considered as a “lightweight” virtualization technology
- ❑ Runs on Linux, Windows, and Mac OS X

A Docker image contains everything that is needed to run your software

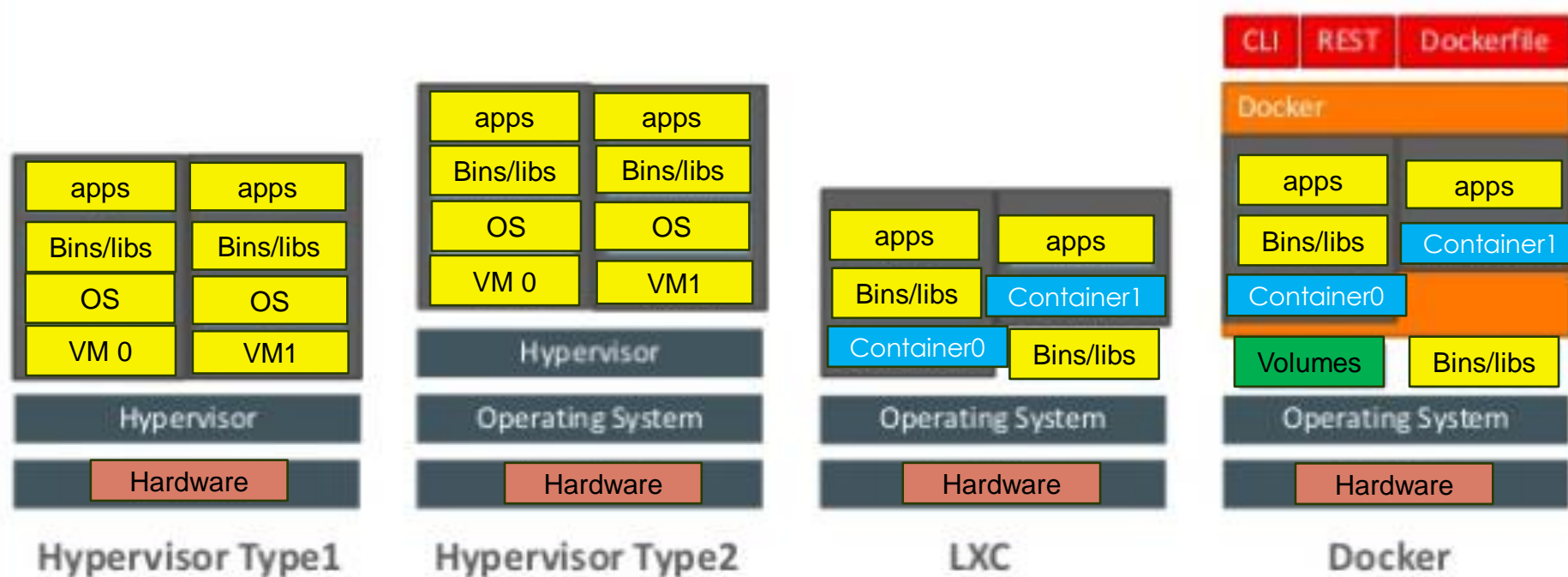
The code, a runtime (e.g. the JVM), drivers, tools, scripts, libraries, deployments, etc.

What is it ?



However, unlike in traditional virtualization with a type 1 or type 2 hypervisor, a Docker container runs on the kernel of the host operating system. Within a Docker image there is no separate operating system

Docker against LXC and Hypervisors Compared



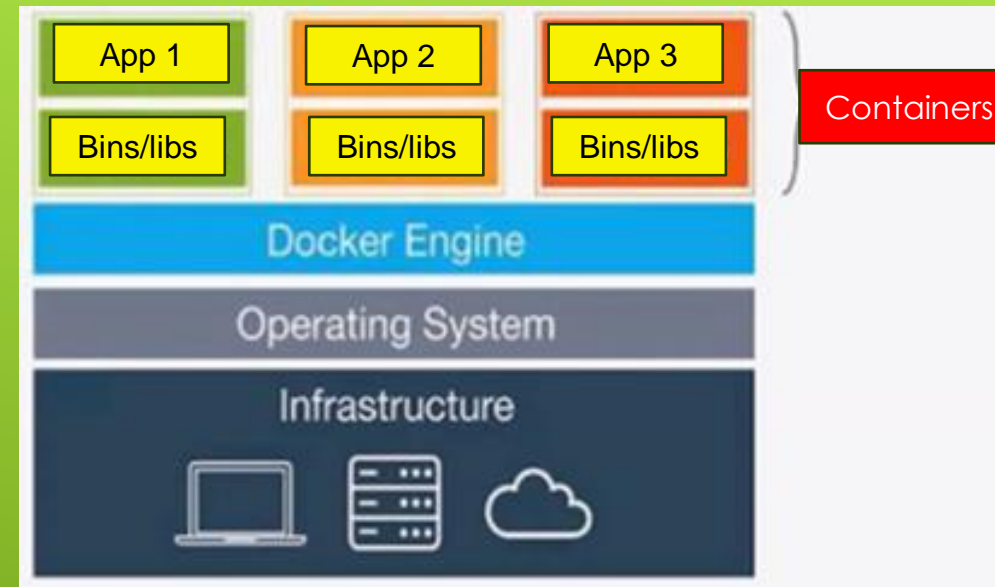
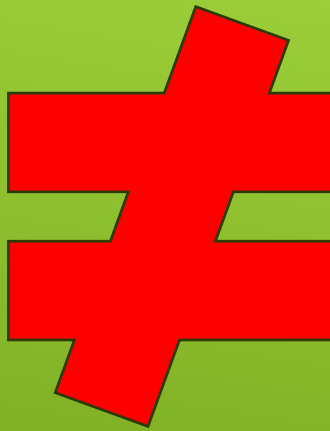
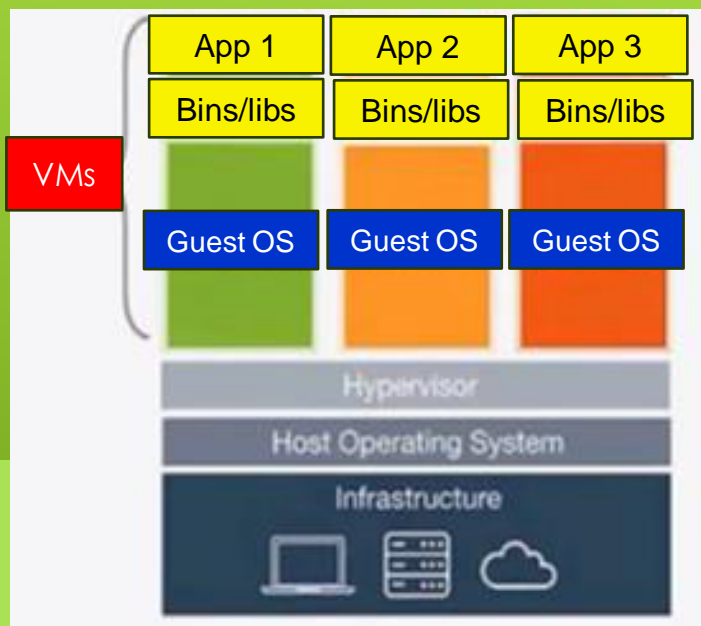
Server Virtualization
Type 1 hypervisor = on bare metal

Desktop Virtualization
Type 2 hypervisor = with host OS

The **namespace subsystem** and the **cgroup subsystem** are the basis of lightweight process virtualization. They form the basis of Linux containers

Docker Container in Linux with own FS, network stack / IP address, process space and resource limits -- isolation

Virtualizations VS Containerization



Guest OS Sits on the Hypervisor

- Each VM includes the app, necessary binaries , libraries and entire guest OS

Docker Sits on the OS

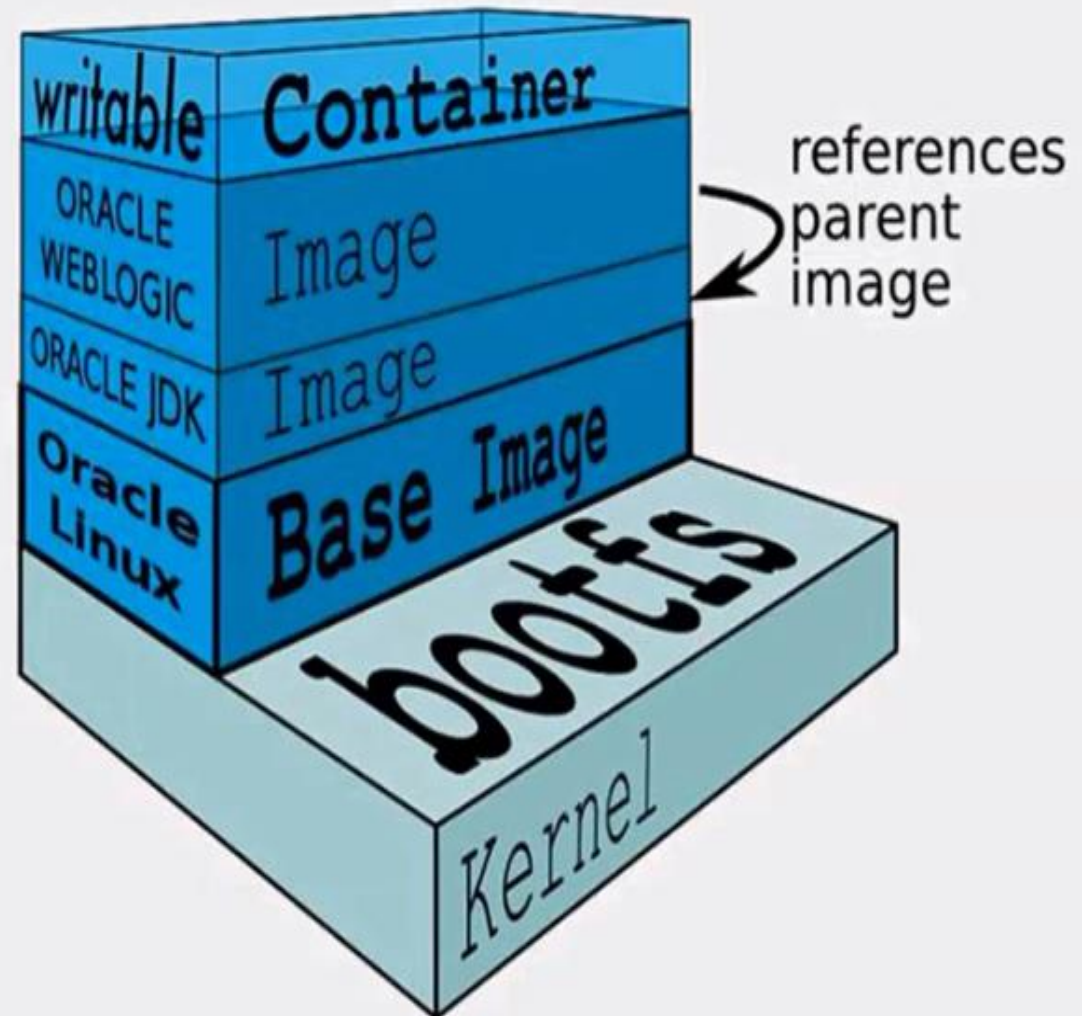
- Containers include app & all of its dependencies but share the kernel with other containers
- Run as an isolated process in userspace on the host OS
- Not tied to any specific infrastructure, containers run on any computer , infrastructure and cloud.

Images and Containers



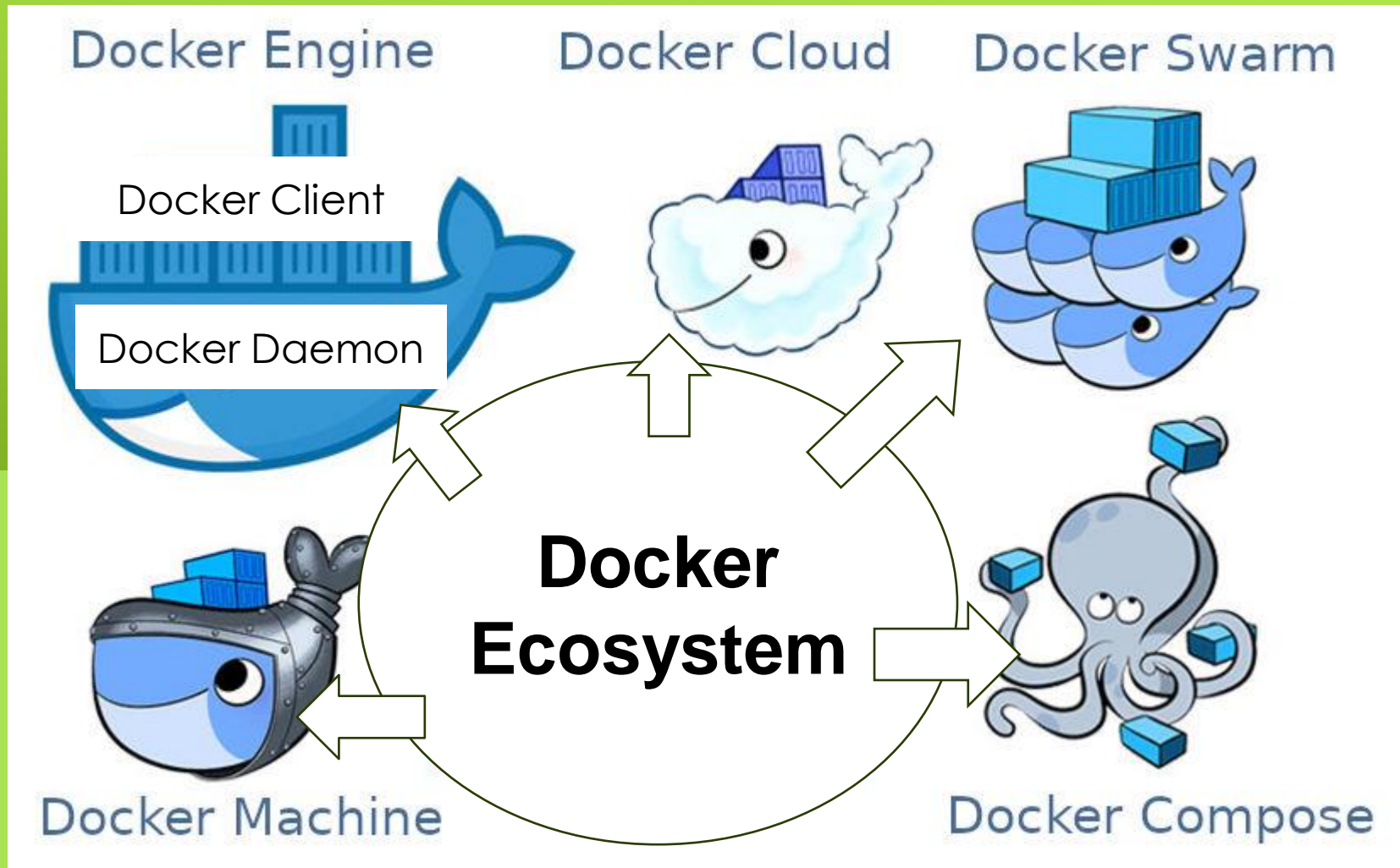
Docker Images

- Containers have writeable file system
- Recipes, the Dockerfiles, can be easily shared
 - Container as code
- Images have layered file systems
- Images can be extended
- Images can be shared as binary files





Docker Ecosystem



[Docker Products](#)

[Get Docker](#)

[Docker CE](#)

Docker Daemon CLI

DTR CLI

Docker CLI

UCP CLI

Docker Machine CLI

Docker Compose CLI

TNH

Dockerfile



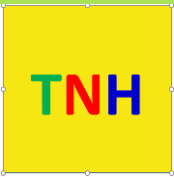
```
# syntax=docker/dockerfile:1
FROM node:12-alpine
RUN apk add --no-cache python g++ make
WORKDIR /app
COPY . .
RUN yarn install --production
CMD ["node", "src/index.js"]
```

```
docker build -t getting-started .
```

```
docker run -dp 3000:3000 getting-started
```

After a few seconds, open your web browser to <http://localhost:3000>. You should see our app.

Ref : https://docs.docker.com/get-started/02_our_app/



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Thank You.