



Softwaredevelopment in der Cloud und Docker

```
timo@myhome ~]$
```

```
timo@myhome ~]$ cat /opt/persons/timo.ini
```

```
name: 'Timo Stark'
```

```
from: 'Germany'
```

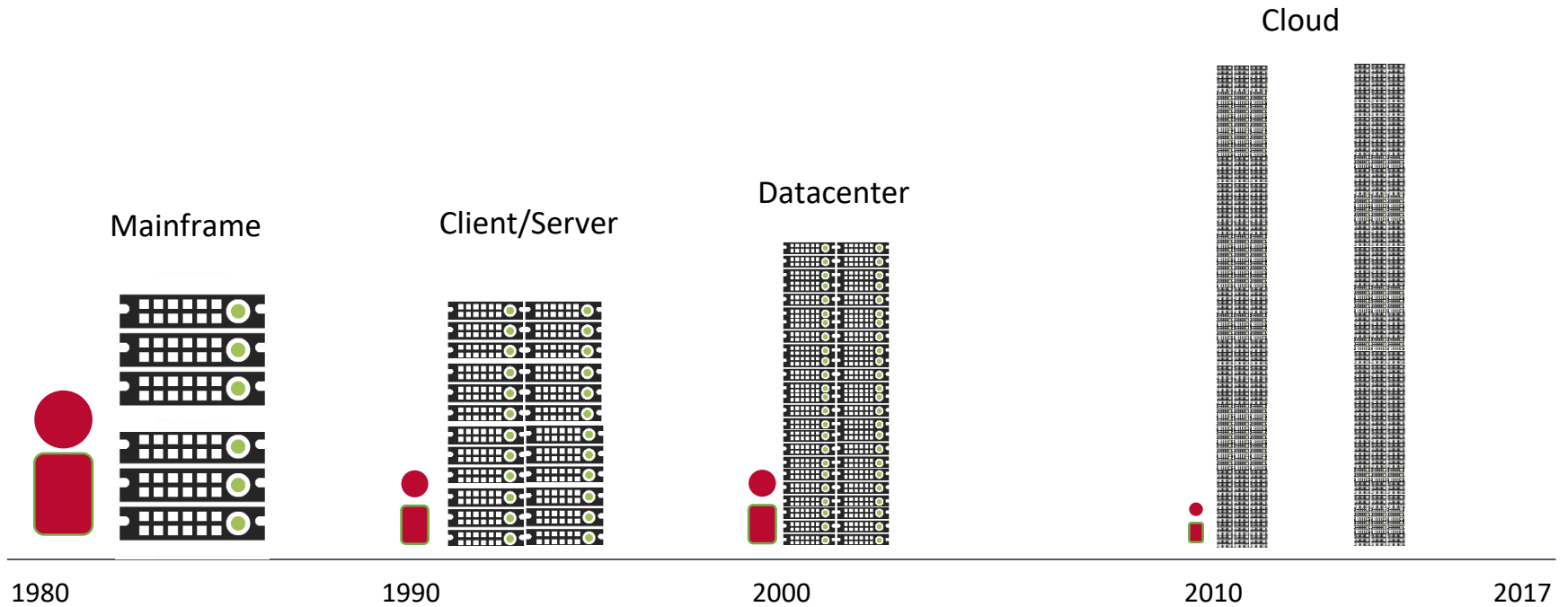
```
job: 'Full Stack Web Developer and Architect'
```

```
timo@myhome ~]$ █
```

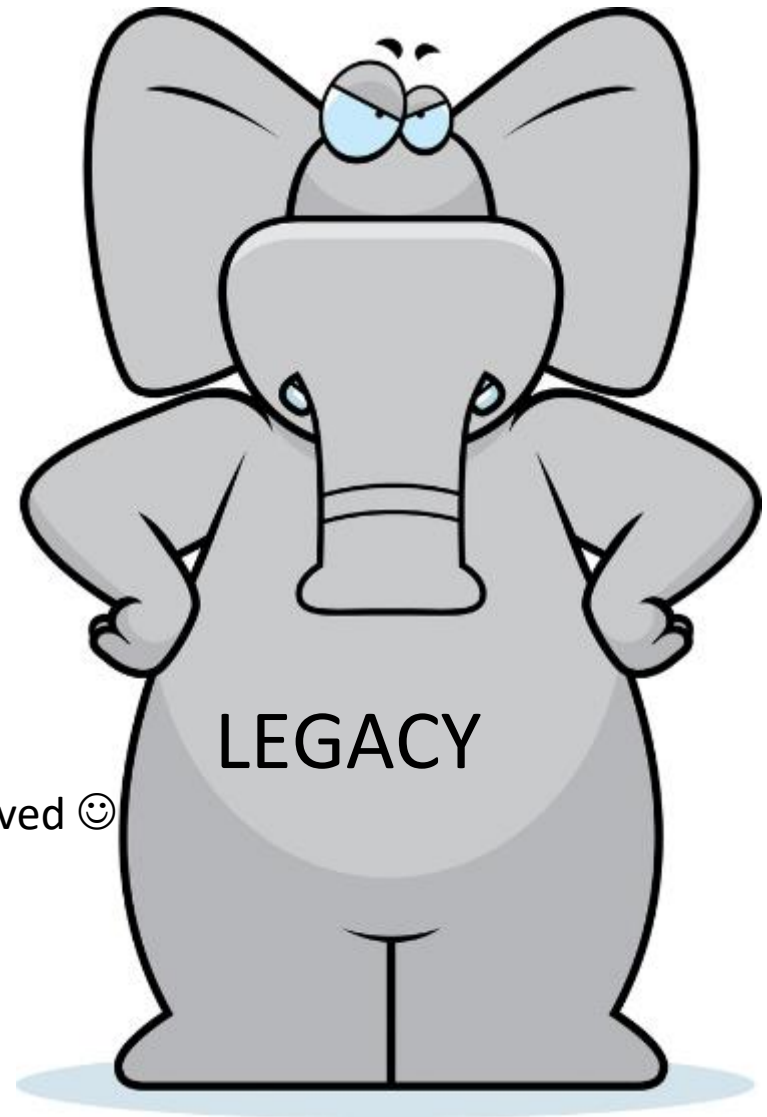
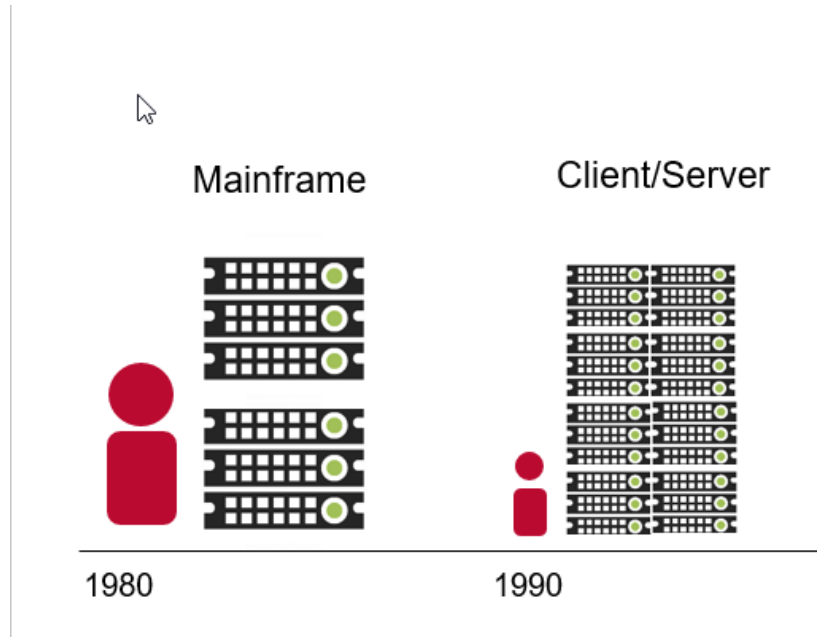




Computeoverview



Der „Softwareelefant“



Legacy apps are living in our Datacenters

Became big, because they never changed or moved 😊

GOAL: Make them flighable or transportable.



The „Legacy-Elephant“ in a Container

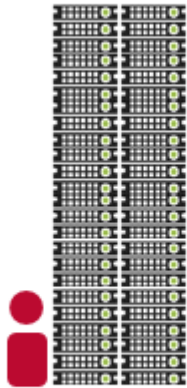
Software installation / runtime configuration 2000 / 2012

Installation of Runtimes
On VMs took a long time

**AND!!! Is not really
Re-useable!**



Datacenter

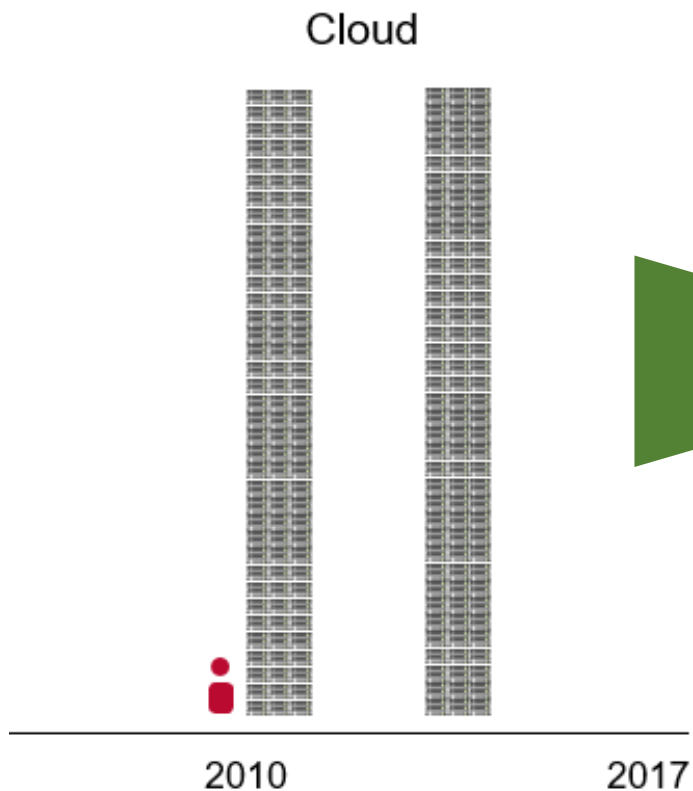


2000





Software in the cloud – A new structure



IaaS

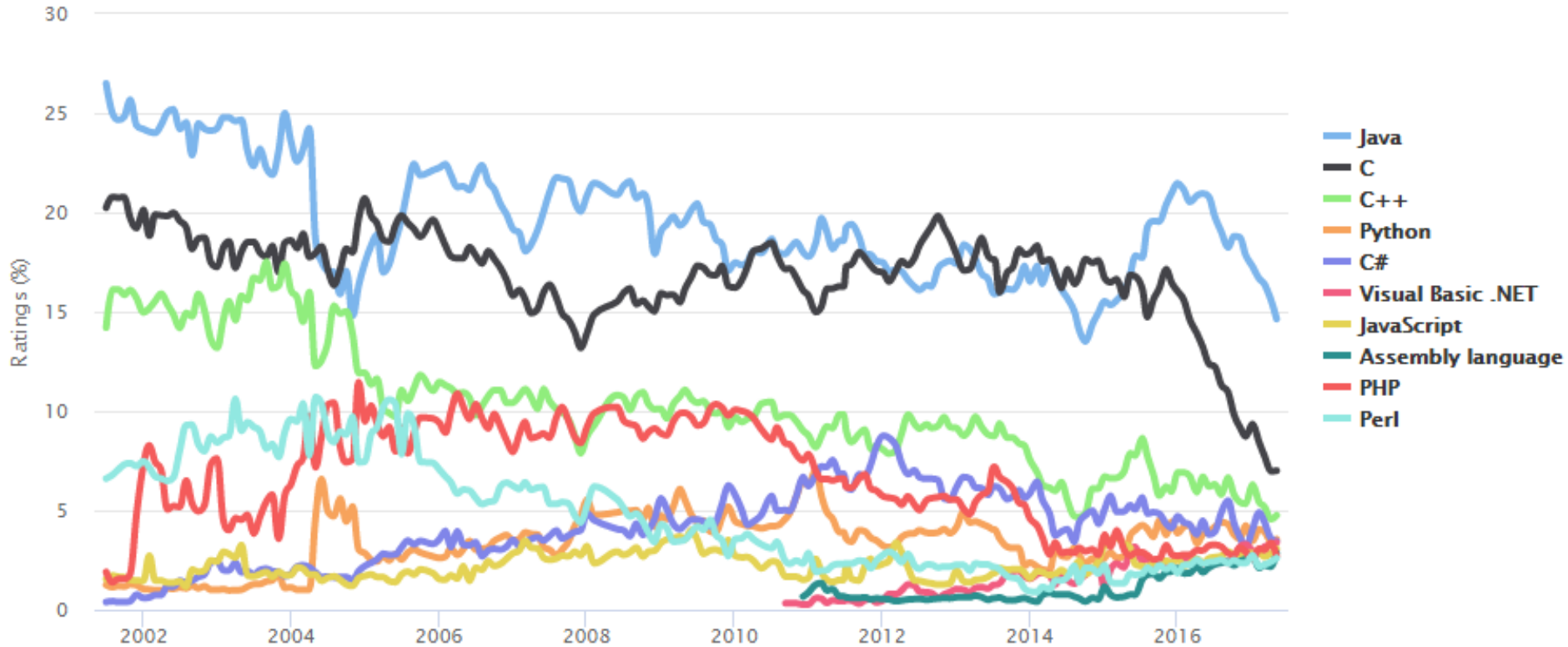
PaaS

SaaS

*aaS

TIOBE Programming Community Index

Source: www.tiobe.com



„Java and C are in a heavy downward trend since the beginning of 2016. Both languages have lost more than 6% if compared to last year. ”

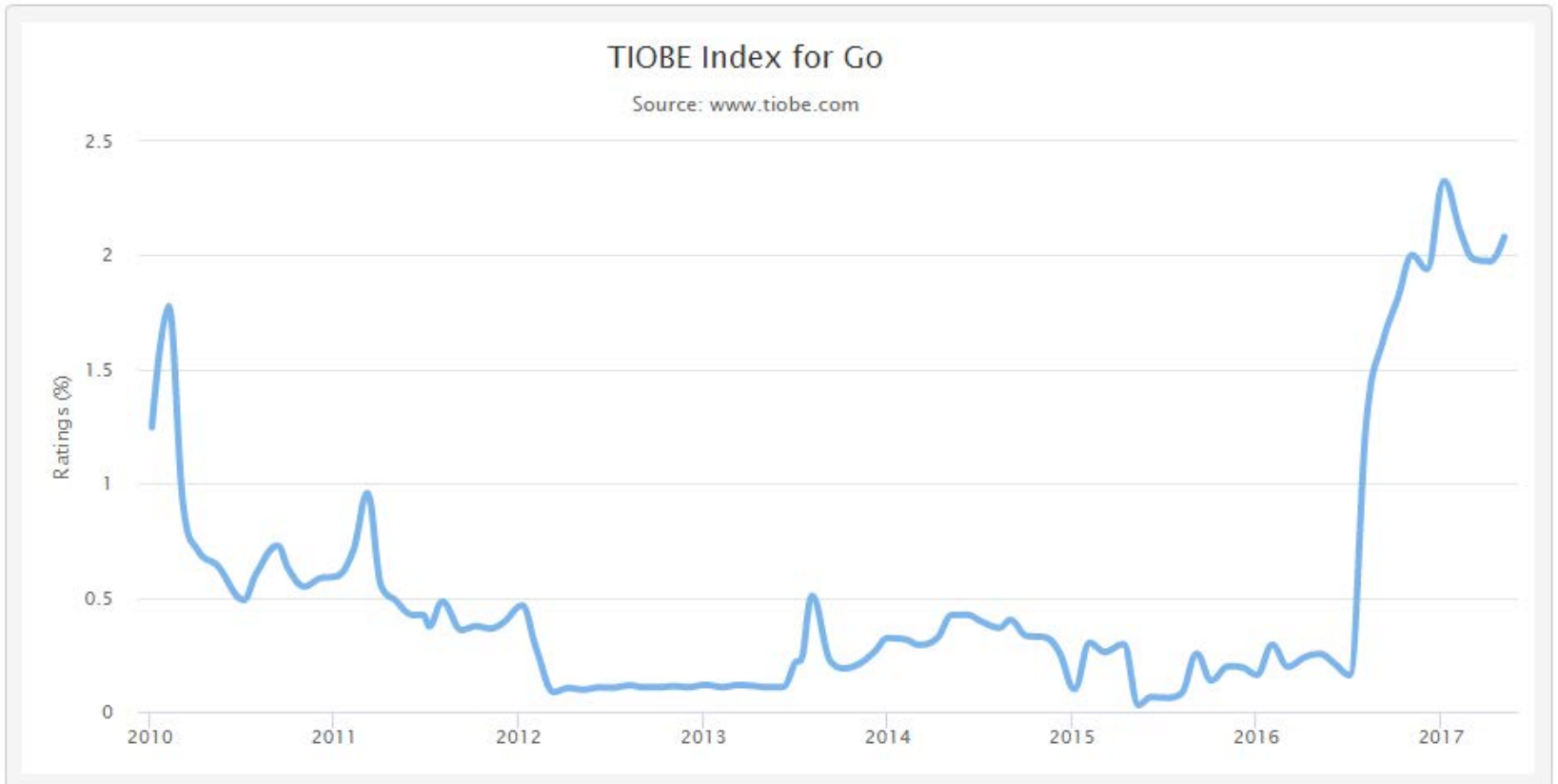
<https://www.tiobe.com/tiobe-index/>

Go

📈 Highest Position (since 2001): #13 in Jan 2017

📉 Lowest Position (since 2001): #122 in May 2015

🏆 Language of the Year: 2016, 2009



_There is no best
language!

Everything is /
as code

```
_for ( i i )  
{  
    deploy ( ) i  
}
```

DEVOPS: the infinite loop of release



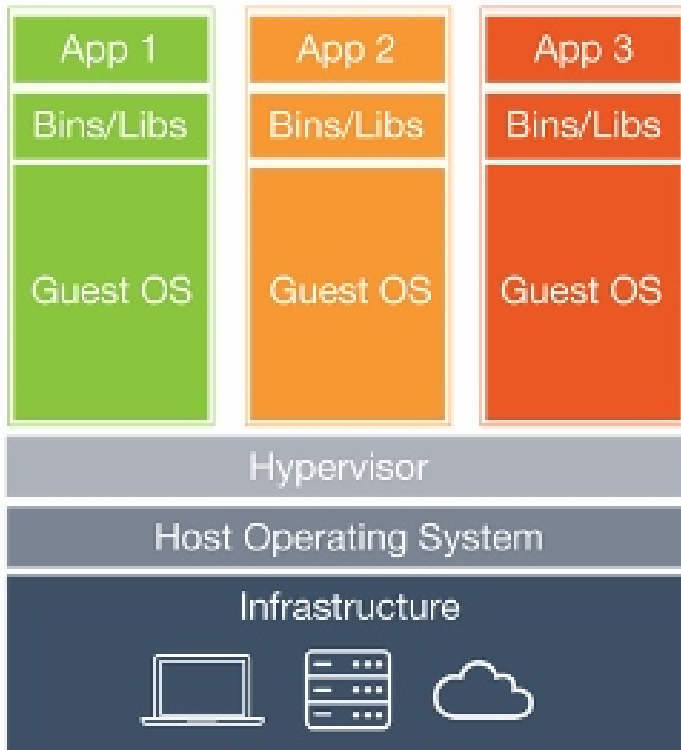
[
automate: evrything
]



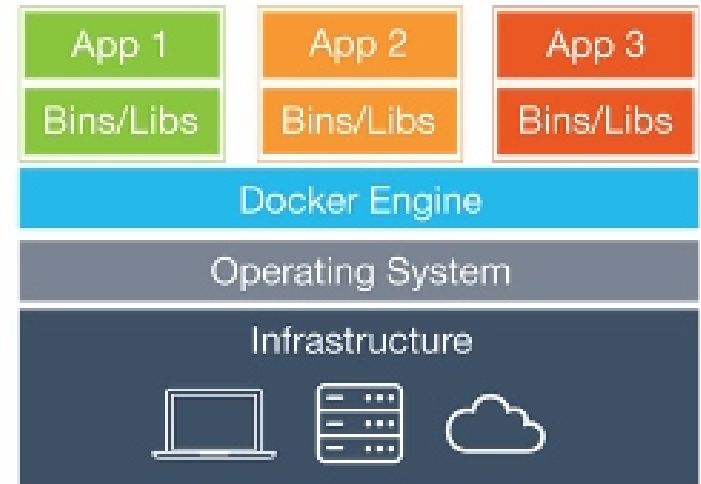
Docker is not a Virtual Machine!

But if I

NO – it is not!



Virtual Machines



Containers

Docker – Container runtime



Home

LinuxContainers.org Infrastructure for container projects.

linuxcontainers.org is the umbrella project behind LXC, LXD, LXCFS and CGManager.

The goal is to offer a distro and vendor neutral environment for the development of Linux container technologies.

Our main focus is system containers. That is, containers which offer an environment as close as possible as the one you'd get from a VM but without the overhead that comes with running a separate kernel and simulating all the hardware.

This is achieved through a combination of kernel security features such as namespaces, mandatory access control and control groups.



2014 (Docker V.0.9)

docker / libcontainer

Watch 118 Star 968 Fork 295

Code Pull requests 10 Projects 0 Pulse Graphs

PROJECT MOVED TO RUNC <https://github.com/opencontainers/runc>

Go 97.9%

Other 2.1%

Docker container – the AUFS filesystem

aufs – advanced multi layered unification filesystem

- Developed by Junjiro Okajima in 2005

Main Features

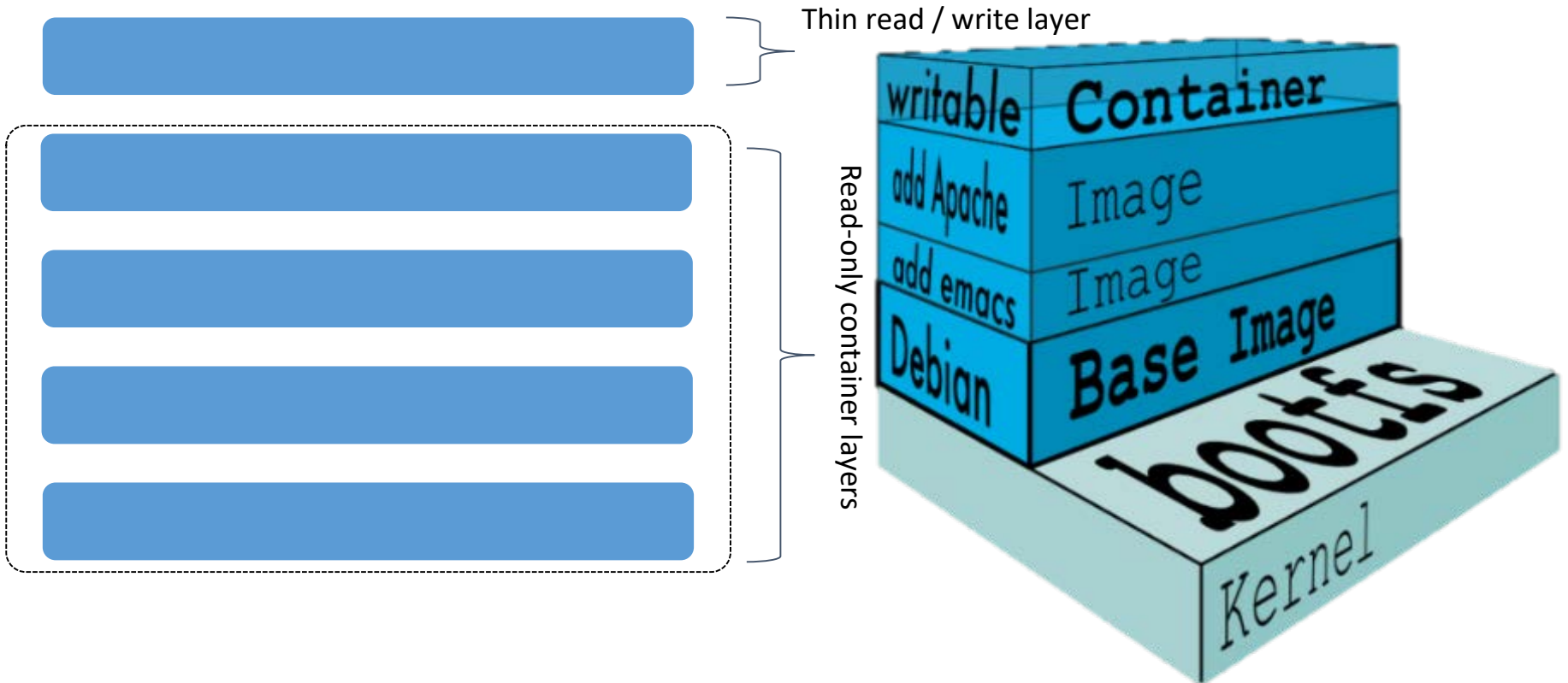
- Fast container startup times.
- Efficient use of storage.
- Efficient use of memory.

<https://docs.docker.com/engine/userguide/storagedriver/aufs-driver/>

<http://aufs.sourceforge.net/aufs4/man.html>

<http://aufs.sourceforge.net/History>

What are containers??



```
FROM ubuntu:latest
RUN apt-get update -y
RUN apt-get upgrade -y
RUN apt-get install oracle-java8-installer
COPY Main.class /app
WORKDIR /app
CMD ["java", "Main"]
```

**NOOOOOOO, Never,
not in a single case...**

DANGER – Be careful with RUN command

The `RUN` instruction will execute any commands in a new layer on top of the current image and commit the results. The resulting committed image will be used for the next step in the `Dockerfile` .

Layering `RUN` instructions and generating commits conforms to the core concepts of Docker where commits are cheap and containers can be created from any point in an image's history, much like source control.



```
FROM java:8-jre
COPY Main.class /app
WORKDIR /app
CMD ["java", "Main"]
```

OR

```
FROM Ubuntu:latest
RUN apt-get update -y && apt-get upgrade -y &&
    apt-get install oracle-java8-installer \
    --no-install-recommends
```

```
COPY Main.class /app
WORKDIR /app
CMD ["java", "Main"]
```



What is software development in the cloud, now?

Run everywhere....

... on a suitable platform

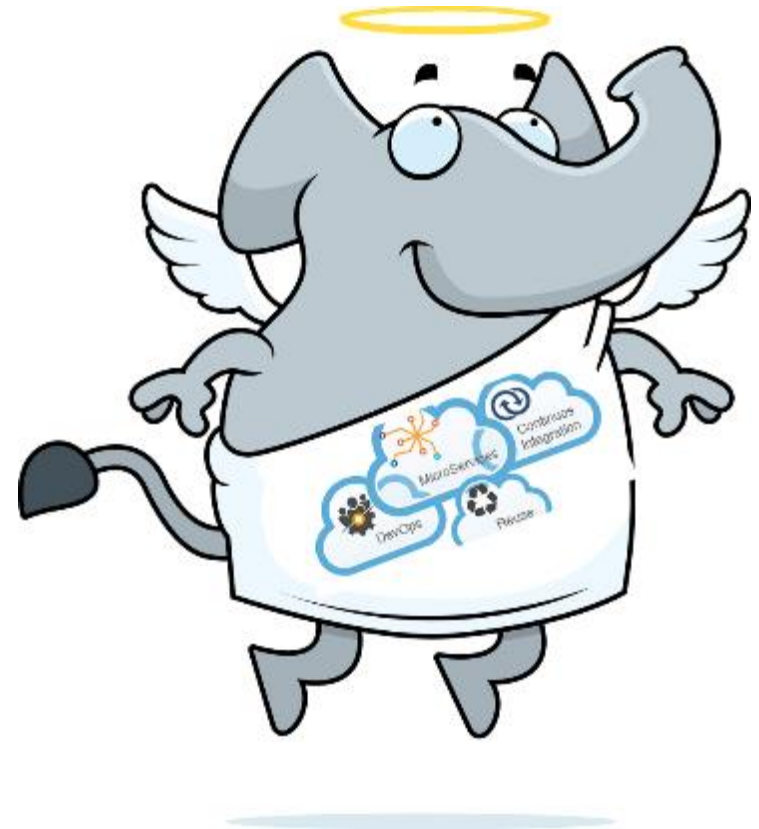
the language that fits most!

Developers Choice!

Use automation!

Decouple system resources

Let the developers code ... not doing powerpoint!



Docker, Moby and Linuxkit - A Windows Setup Tutorial

May 19, 2017

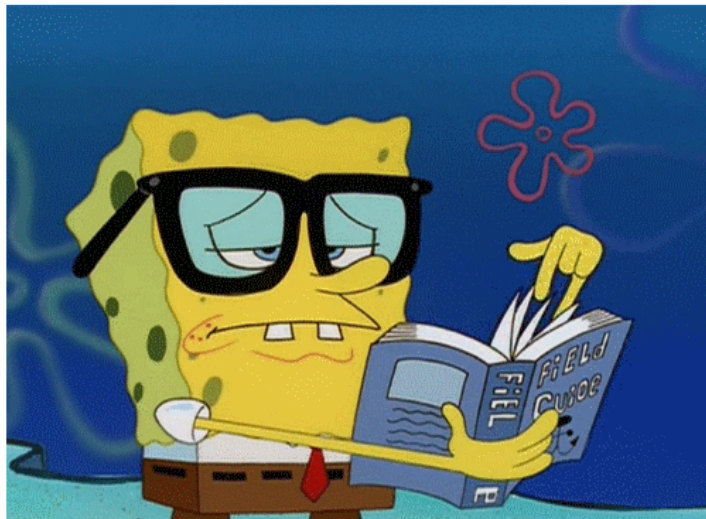
Installing Moby project and linuxkit on Windows – DEVELOPER MACHINE

Pre-Required:

Windows10 Pro with Hyper-V and 60min of your time.

Today, I tried or better I installed the components are necessary to run Dockers mobyprojekt and linuxkit on windows.

Before we can start building an image we should check a couple of pre-requirements first. I will also describe how to use GitBash or PowerShell to fire commands and stuff like that. So keep reading :).



More on my Blog:

<https://tippexs.github.io/>