Workflows for Reproducible Research with R & Git

Saving computational environments



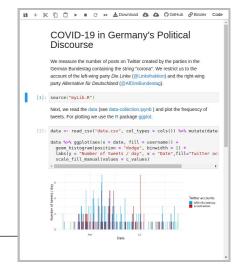
Organizers:

Bernd Weiß

Arnim Bleier

Johannes Breuer

Abstraction Layers



code, data, ...

R packages

R interpreter / compiler

operating system

hardware

physics



... and what we depend on.

"Our analysis"

Logic elements implemented in water.

https://en.wikipedia.org/wiki/Fluidics In general computational universality.

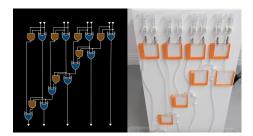




Image: http://reddit.com

Gaining Independence

System-wide installation of dependencies / packages

Virtual environments / project-wide dependencies

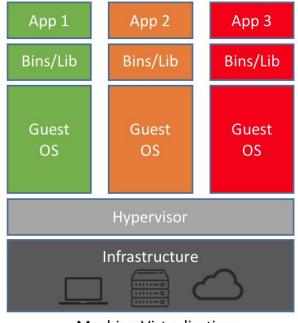
Virtual machines (VMs & Containers)

Coupled to a specific machine.

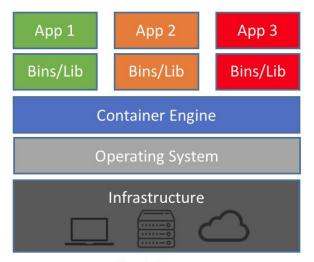
Increasing of independence and portability



VMs vs. Containers



Machine Virtualization



Containers



Container Implementations

LXC:

(Linux Containers): Early

implementation. https://linuxcontain

ers.org/

Docker:

Popular and most widely used platform. www.docker.com

Windows Containers:

Similar to Docker but tailored to Microsoft.

https://github.com/microsoft/ Windows-Containers Podman:

Open-source
Docker compatible
implementation.
https://podman.io/

operating system



Docker:

Popular and most widely used platform.
www.docker.com

Let's try this



https://github.com/arnim/rocker-demo2023

