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INTRODUCTION TO DOCKER CONTAINERS ON WINDOWS

Tobias Fenster, April 18 2018

VINCI ENERGIES

INTRODUCTION

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Microsoft MVP for Business Solutions

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https://navblog.axians-infoma.com

https://github.com/tfenster

WHAT IS DOCKER?

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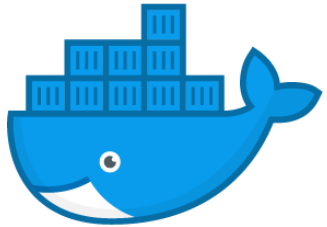

Leading cross platform software container environment

Docker image: template with the minimum amount of os, libraries and application binaries needed

Docker container: instance of an image with an immutable base and it's changes on top. NOT a VM, you especially don't have a GUI and can't connect with RDP!

Docker host: (physical or virtual) machine where the containers are running

WHY DOCKER?

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DEV

OPS

Ecosystem

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VIRTUAL MACHINES VS CONTAINERS

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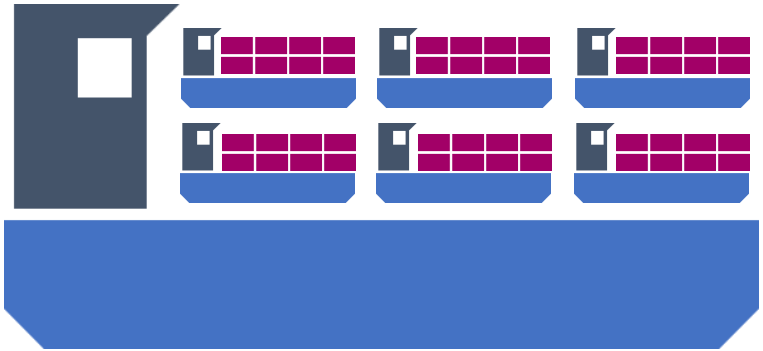

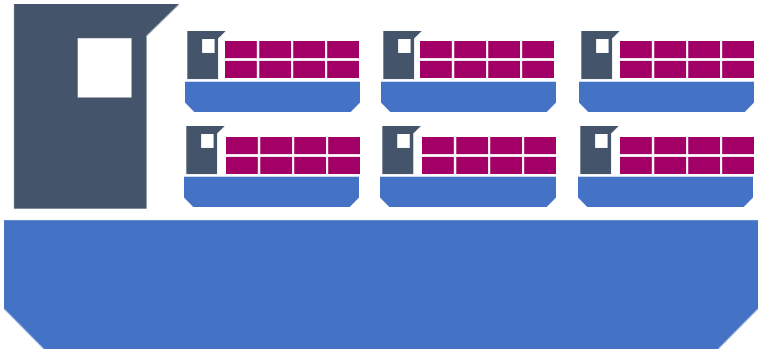

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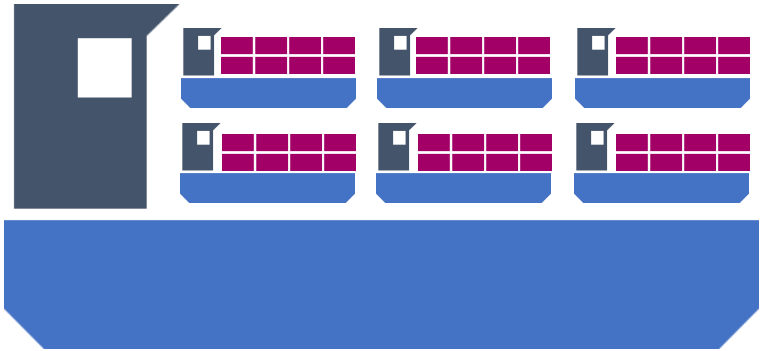
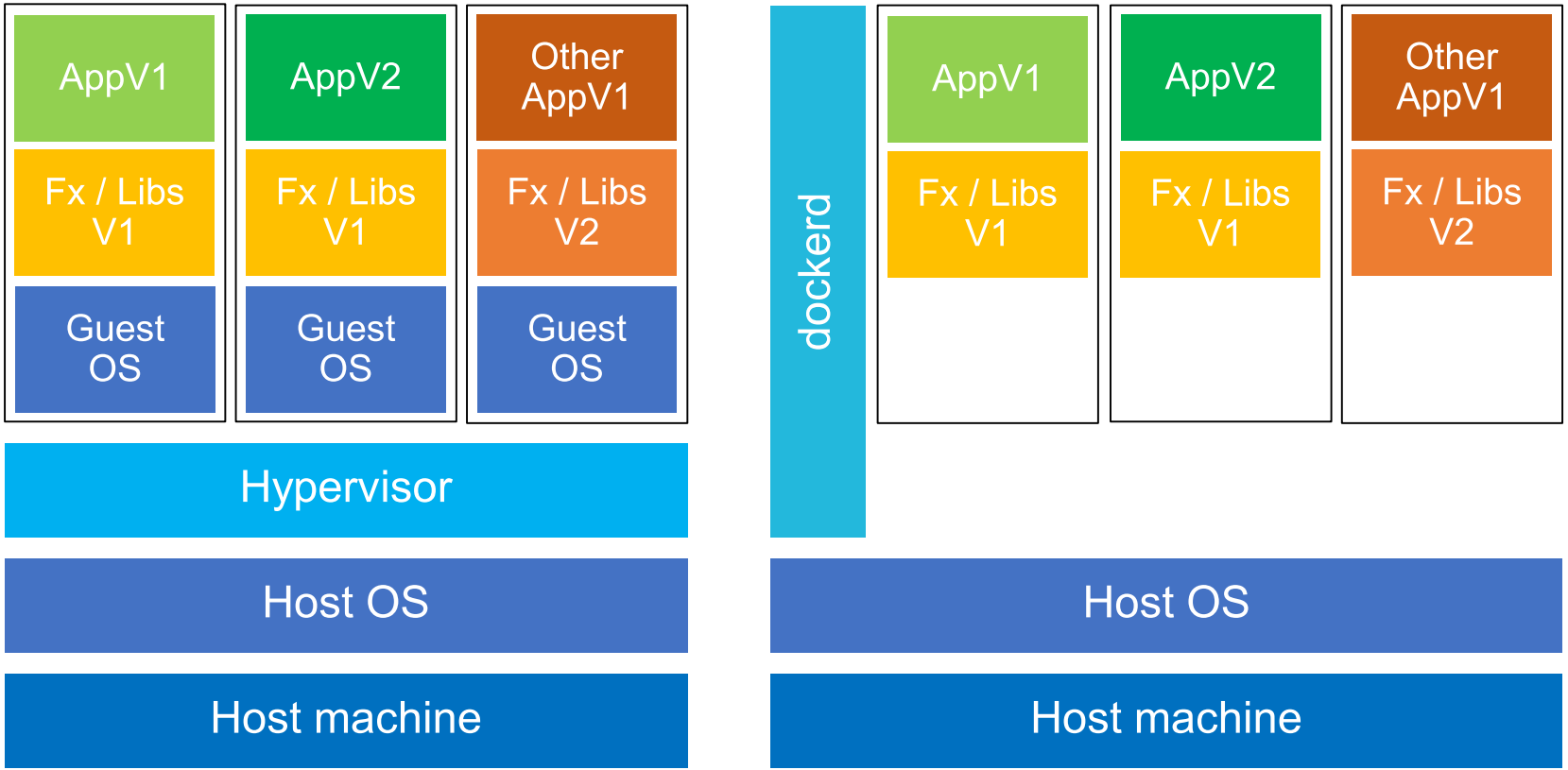
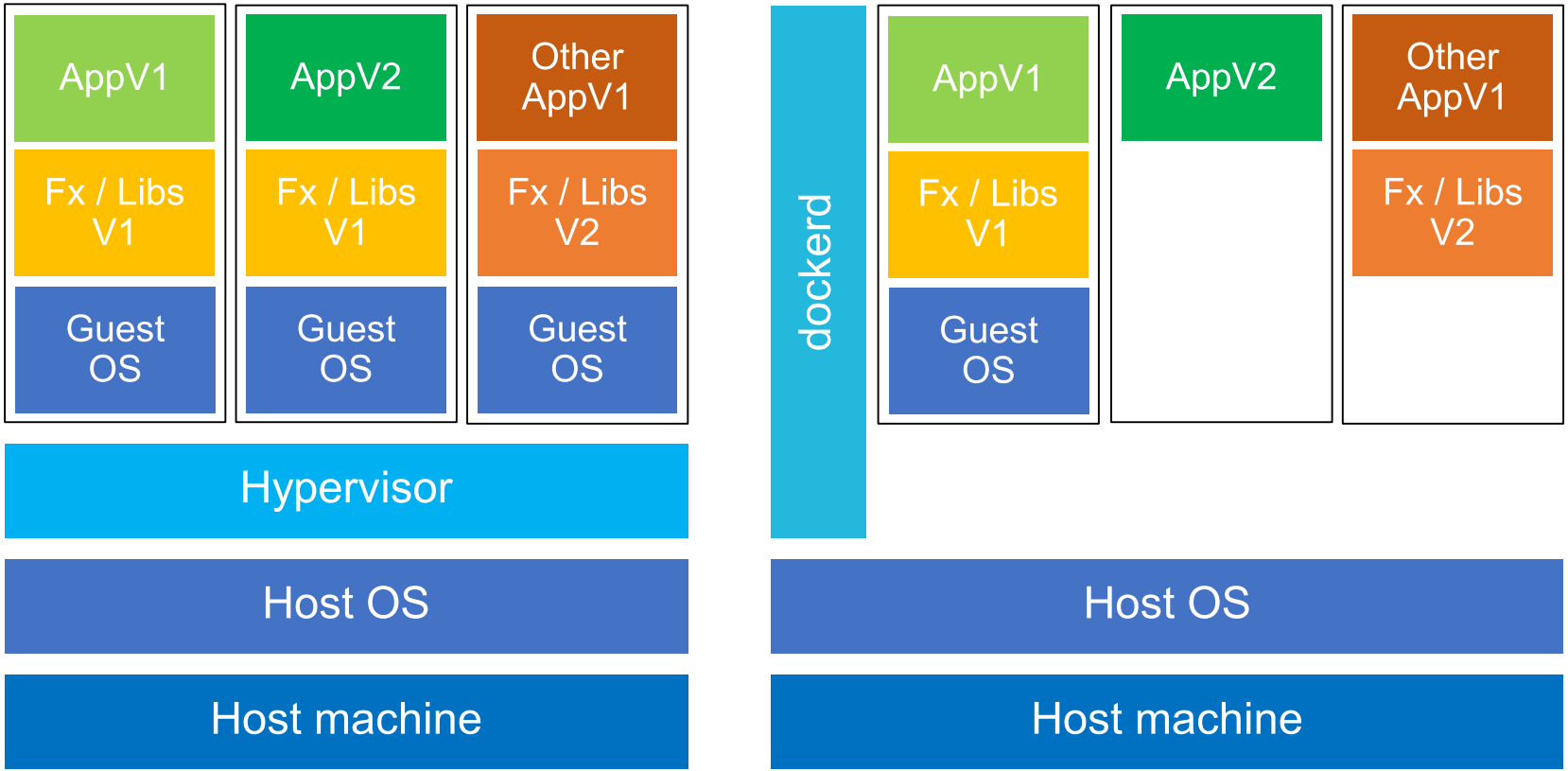


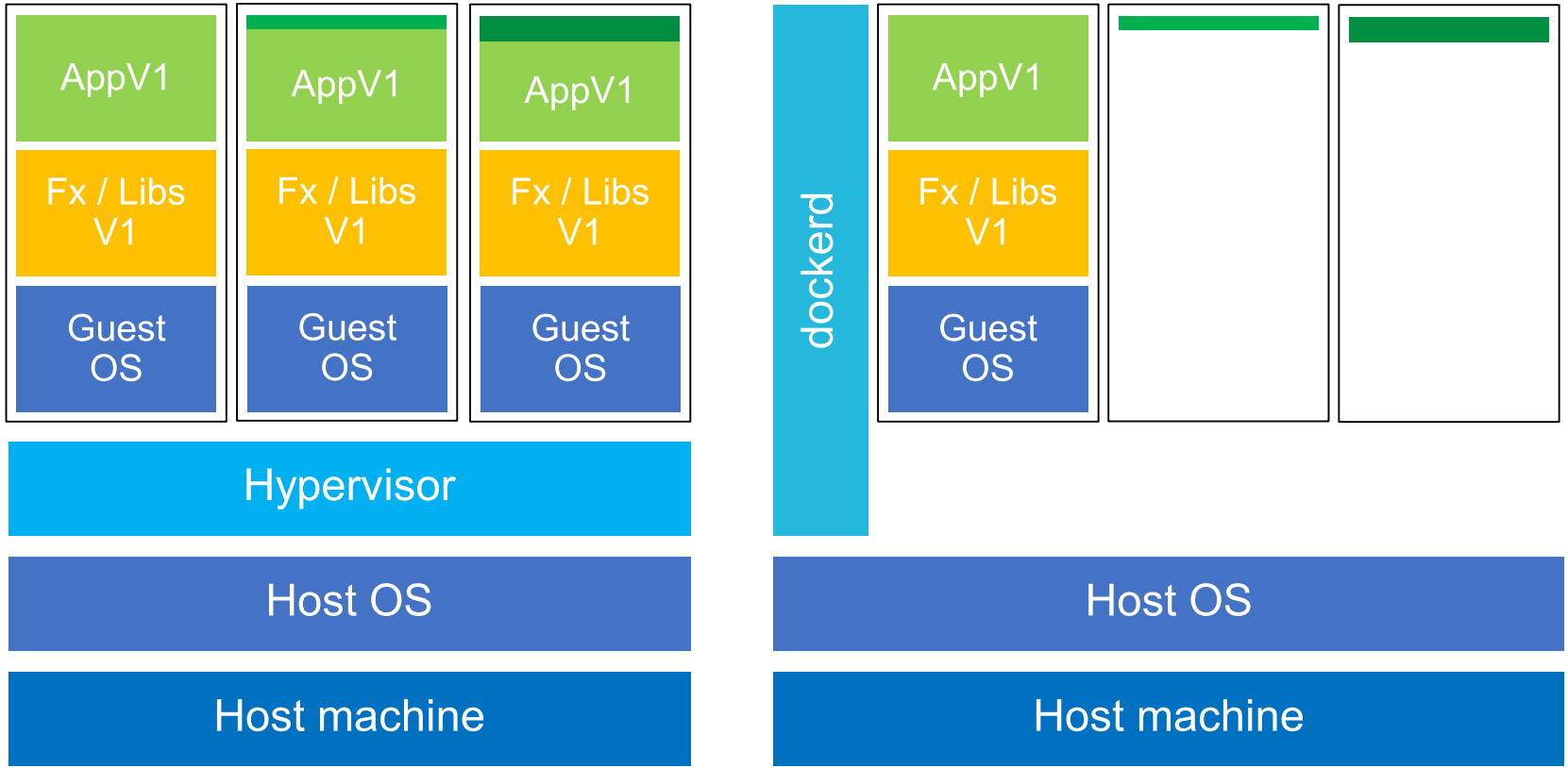
VMS VS CONTAINERS – RUNTIME



VMS VS CONTAINERS – IMAGE STORAGE



VMS VS CONTAINERS – INSTANCE STORAGE



DEPLOYMENT OF APPLICATIONS

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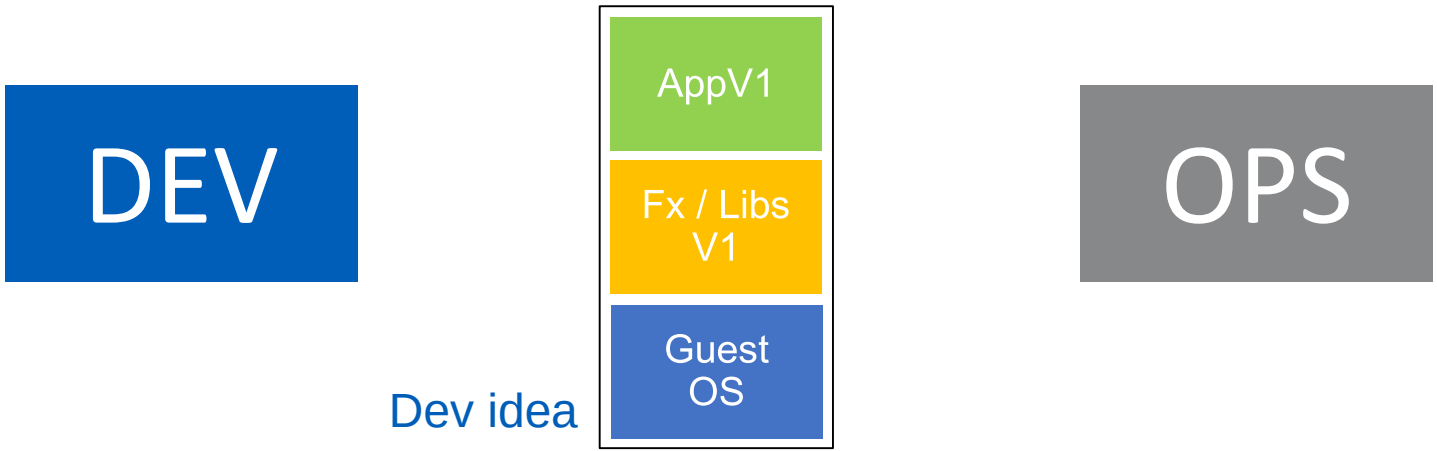
Without Docker: Dev defines OS, frameworks, libs, installation procedure. Ops act on that, maybe create automation / images, need to maintain. Over time even ops-controlled environments diverge



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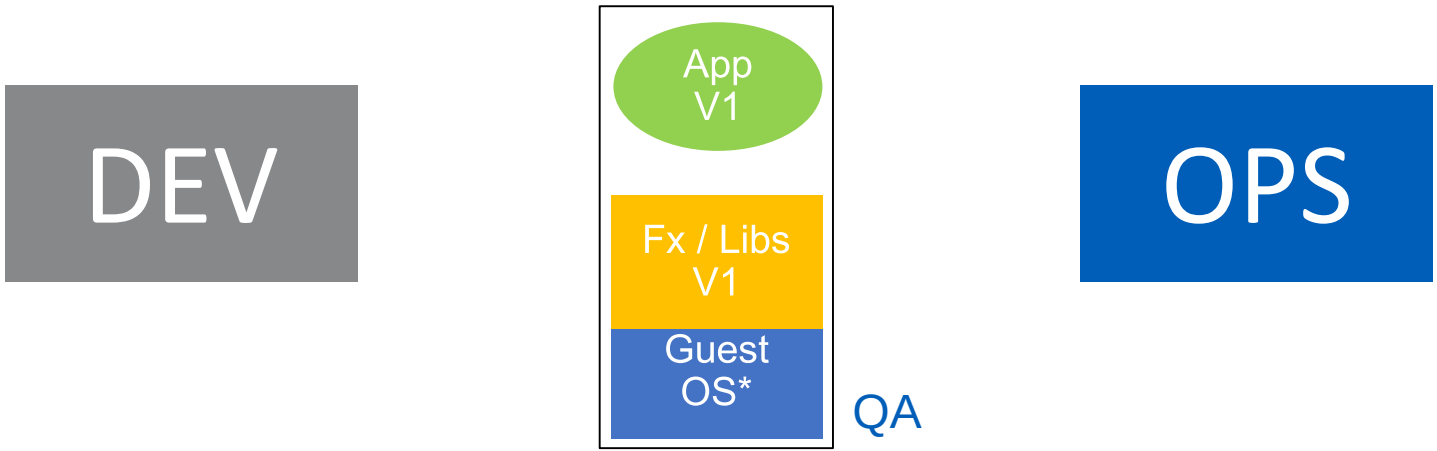

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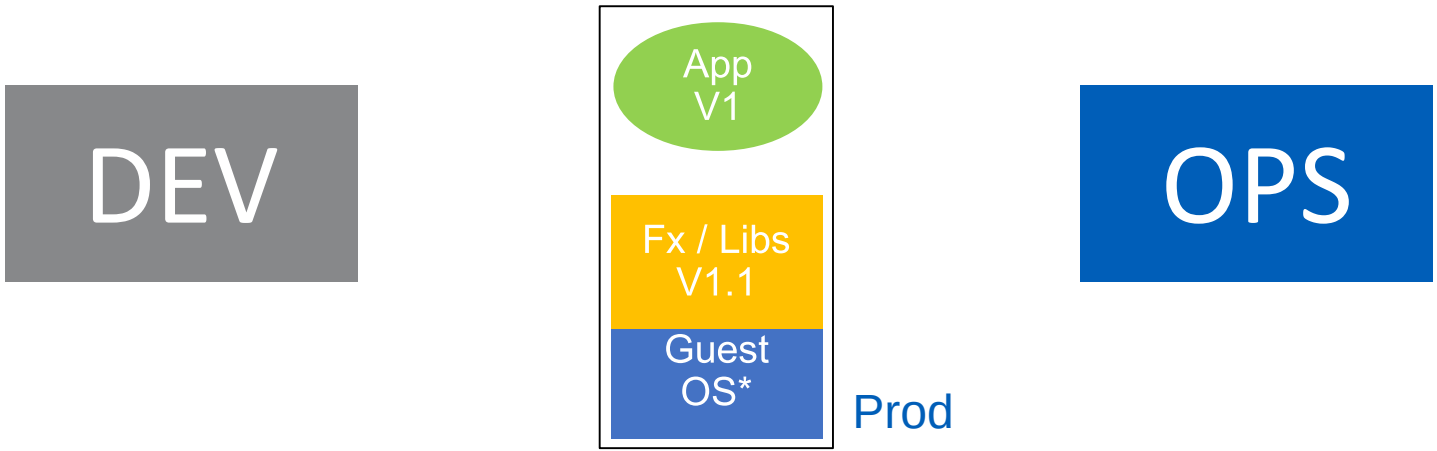

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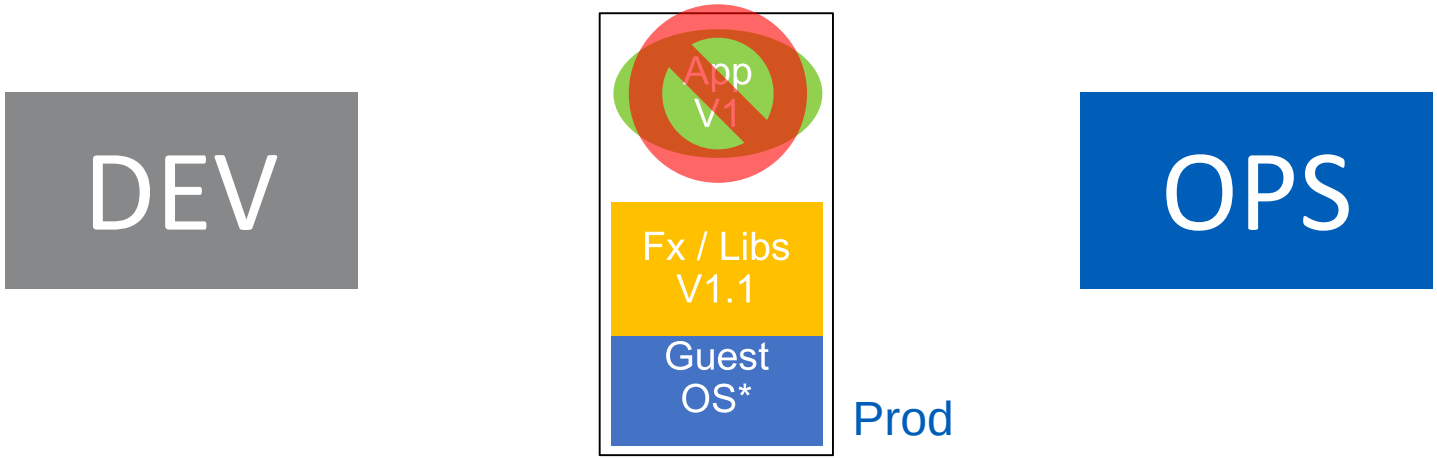

DEPLOYMENT OF APPLICATIONS

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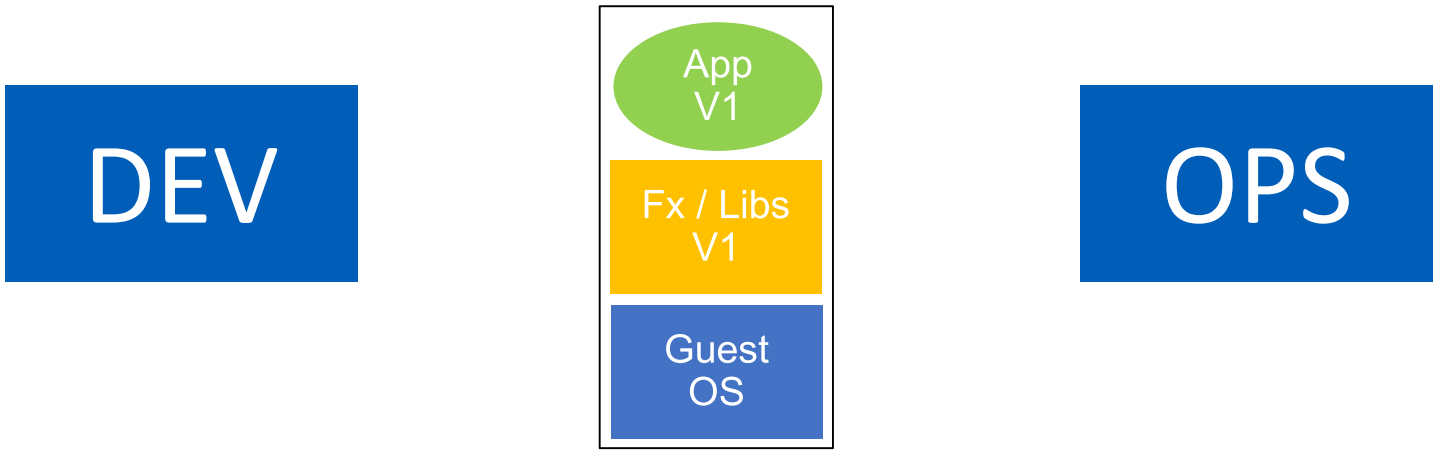
With Docker: Dev describes in an easily understandable way how an application is deployed, maybe even built (Dockerfile). Dev / QA / staging / production are identical, „works here“ doesn‘t happen



INTERLUDE: SAMPLES AND SOURCES

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Follow @EltonStoneman, @StefanScherer

https://github.com/sixeyed/docker-windows-workshop and

https://blog.sixeyed.com/

https://github.com/StefanScherer/dockerfiles-windows and

https://stefanscherer.github.io/

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DOCKERFILES

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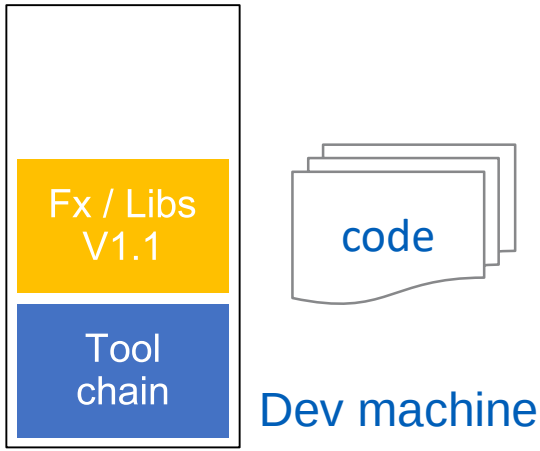
DEVELOPMENT OF APPLICATIONS

Without Docker: Dev sets up local dev and build environment, codes away and pushes results to a repository. (Ideally) continuous build picks changes up and builds them



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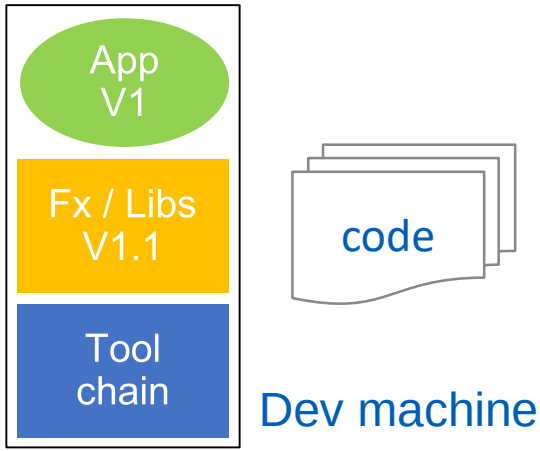

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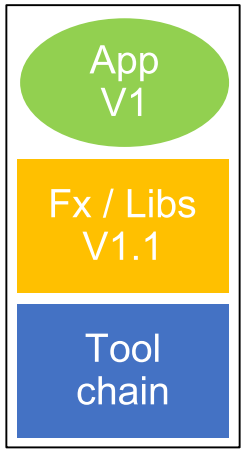
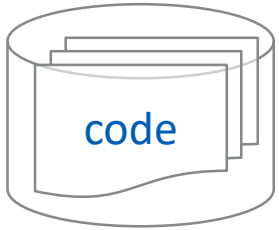


Dev machine



Code repo

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DEVELOPMENT OF APPLICATIONS

With Docker: Dev and build server use build containers, everything is identical and gets the identical result

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DOCKER HUB AND RUNTIME ENVIRONMENTS

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> 180,000 free images, readily available for download (Docker pull)

Public and private repositories

Vibrant tools-community around Docker

Use it, adjust it, publish it

Azure Container Services or other offers allow you to just run your container without worrying about the infrastructure („serverless“)

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OUTLOOK: THINGS I DIDN'T EVEN MENTION

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Splitting up monoliths to microservices and scaling them independently

Scalable and self-healing architectures

Easily manage distributed environments and overn mixed-OS solutions with the same tooling

Restrict resource usage even if your application can‘t do that natively

Distribute 100% identical solutions to customers / partners

…

https://docs.microsoft.com/en-us/virtualization/windowscontainers/about/

THANK YOU FOR YOUR ATTENTION!

For questions, please contact

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@TobiasFenster