Software-defined data center

Johannes M. Scheuermann
Johannes M. Scheuermann

› KIT & Working student
› IT Engineering & Operations @inovex
› Working with new data center technologies
› @johscheuer
How does a classical data center look like?
Challenges from an Ops view
Challenges from a Dev view
A new approach the SDDC
“A Software Defined Data Center (SDDC) is a data storage facility in which all elements of the infrastructure – networking, storage, CPU and security – are virtualized and delivered as a service.”

- DMTF
Goals

- Pool of resources
- Abstraction
- Measurement
- Policy
A SDDC should be

- Standardized
- Holistic
- Automated
- Adaptive
Abstract view
Abstract View from 5000 feet

- SDDC API
- APPS
- Infrastructure management
- Hardware abstraction
- Hardware
Abstract View from 1000 feet

Ad-hoc infrastructure

Microservices

Container

SDDC API

Framework / Apps

Cluster scheduler - Data center abstraction layer

Software defined infrastructure

Management

Automation

Software defined networking

Compute & Memory

Software defined Storage
Main parts of a SDDC
Software defined infrastructure

Software defined networking

Compute & Memory

Software defined Storage
Software defined networking

Software defined infrastructure

Software defined networking

Compute & Memory

Software defined Storage
Software defined storage
Server virtualization
Container
Minimalistic OS
What about the apps?
Apps

Monolithic

Framework

Microservice
New thinking
To refactor, or not to refactor: that is the question!
Lift-and-shift
Partial refactor
Complete refactor
Difference SDDC & Cloud
Cloud

- Operational model
- Virtualization technologies
- Delivery and consumption
The difference

› Enables clouds
› Not the other way around
› Cloud doesn't need as much automation
› Fun fact: Google shutdowns its intranet
Running microservices
Container  Virtual machine
Containers and microservices

- Optimal
- Lightweight
- Scalable
Challenges and hopes
Hopes
“Developers will ask for an API not for a VM to run their software“

– Anonymous
Thank you!

Johannes M. Scheuermann
IT Engineering & Operations

inovex GmbH
Office Karlsruhe
Ludwig-Erhard-Allee 6
76131 Karlsruhe

Mail:
johannes.scheuermann@inovex.de
Images

› Page 9 - https://flic.kr/p/dZ2xUn
› Page 27 - https://flic.kr/p/pbJ4VJ
› Page 34 - https://flic.kr/p/oeFdPr
› Page 35 - https://flic.kr/p/5zgYor