Overview

Lecture 1: Introduction

- NIST Definition of Cloud
- IaaS, PaaS, SaaS, FaaS
- Public vs. Private Cloud
- Basic “hosting” service vs. managed service
- Benefits/Risks/Regulations: Scalability, Privacy, GDPR, Safe Harbor/Privacy Shield
- Business Models: Overbooking, Pay-per-Use, Standardization & Automation

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Lecture 2: Cloud capabilities

- Cloud roles: Platform/Service provider vs. customers (developers, enterprises)
- Cloud architectures & definitions
- Operational requiremens
- Cloud performance
- Cloud service provisioning
- Extra Lectures: Various cloud stacks, Cloud networking, Security concepts

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Lecture 3: IaaS introduction

- Intro to Cloud Platforms (Exoscale, Amazon AWS/EC2 and Google Cloud Platform)
- Virtual Server+Storage+Networking capabilities
- Automation via Terraform
- Hands-on demos

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Lecture 4: Beyond IaaS

- Container Services (Docker & Kubernetes)
- Differences Container vs. classical server virtualization
- PaaS, SaaS, FaaS (Concepts, Examples)
- Hands-on demos

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Lecture 5: Cloud-native software development

- Cloud-native software basics & definitions
- Microservices
- 12-factor Apps
- Frameworks and tools
- Hands-on demos

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