Overview

Lecture 1: Introduction

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

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Lecture 2: IaaS introduction

- The history and inner workings of virtualization
- Virtual machines as a Service
- Storage in the Cloud
- Networking in the Cloud

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Lecture 3: Beyond IaaS

- Application load balancers
- CDNs
- Object Storage
- Databases as a Service (DBaaS)
- Functions as a Service (FaaS / Lambda)
- Containers as a Service (CaaS)
- Stream processing
- Deployment pipelines

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Lecture 4: Containers

- Containers vs. Virtual Machines
- The Dockerfile format
- Container runtimes
- Container orchestrators
- Container networking

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Lecture 5: Cloud-native software development

- 12-factor Apps
- Microservices
- Service meshes
- Frameworks and tools

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