

Cloud Computing

INTRODUCTION

Why Cloud Computing



Google Cloud



What is Cloud Computing

*“Cloud computing is a model for enabling **ubiquitous**, convenient, **on-demand** network access to a **shared pool of configurable** computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly **provisioned** and released with **minimal management** effort or service provider interaction”*

- US NSIT definition of cloud computing

Cloud Computing Characteristics

On-demand self service

Broad network access

Resource pooling

Rapid elasticity

Measured / Monitored service

Scalability

Optimized costs

Outsourced Management

Reliability

Multi-tenancy

Cloud Computing Applications

Banking & Financial Apps

E-Commerce

Social Networking

Education

Healthcare Systems

Intelligent Transportation Systems

Cloud Service Models

Software as a Service (SaaS)

- Applications and user interfaces provided over a network

Platform as a Service (PaaS)

- Application development frameworks, operating systems and deployment frameworks

Infrastructure as a Service (IaaS)

- Virtual computing, storage and network resources provisioned on demand

Cloud Service Models

Software as a Service (SaaS)

- Email: Gmail, Outlook, Yahoo, ...
- Storage: Dropbox, Google Drive, One Drive, ...
- Office: Office 365, Google Docs, ...
- Social Media: Facebook, Twitter, ...

Platform as a Service (PaaS)

- Code Platform: Google App Engine
- Web Hosting: GoDaddy
- Continuous Integration: Travis.ci, Jenkins

Infrastructure as a Service (IaaS)

- Amazon Web Services (AWS) EC2, ECC
- Google Compute Engine
- Microsoft Azure Virtual Machines (VMs)

Cloud Deployment Models

Public Cloud

- Available for public use

Private Cloud

- Operated for exclusive use of a single organization

Hybrid Cloud

- Combines public and private clouds

Community Cloud

- Special case of private cloud that serves a community

Reading List

Chapter 1

Non-Academic Reading

