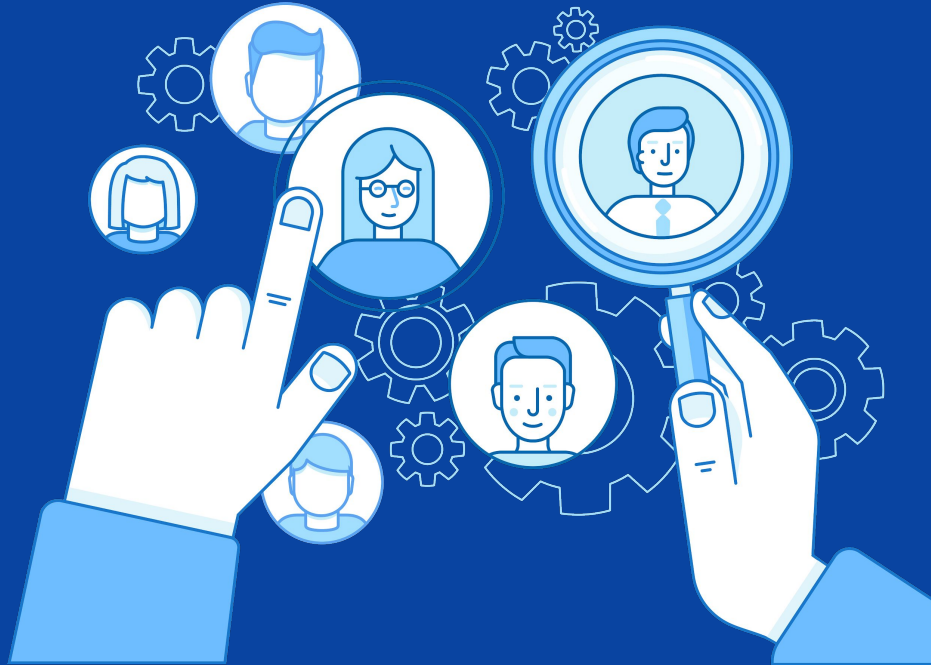# Digital Career Institute

Cloud Providers

Class Room Rules

- **Be Kind!**

- **Participate!**

- **Communicate!**

Goal of the Module

- Understand Cloud Computing

- Learn about Amazon Web Services

What is Cloud?

What is Cloud?

What does cloud computing mean to you?

What is Cloud?

- Cloud computing" is the on-demand provision of IT resources over the internet at usage-based prices

- Instead of purchasing, owning and maintaining physical data centers and servers, you can access technology services such as computing power, storage and databases on demand through a cloud provider

- These resources are delivered through a cloud services platform via the internet with pay-as-you-go pricing.

Different Hyperscalers

- Hyperscaler: provides computing architecture to appropriately scale as customers increase system demand.

- Hyperscaling typically involves seamlessly provisioning and adding compute, memory, networking, and storage resources to a given node or set of nodes that comprise a larger computing, distributed computing, or grid computing environment.

- Examples of hyperscalers are Amazon AWS, Microsoft Azure, Google GCP, Alibaba AliCloud, IBM, and Oracle.

- Each hyperscaler offers different services which can be used to build architectures, services and applications

Traditional computing model

Infrastructure as hardware

Hardware solutions are physical, and they require
- Space
- Staff
- Physical security
- Planning
- Capital expenditure

You must guess at theoretical maximum peaks:
- Is there enough resource capacity?
- Do you have sufficient storage?
- What if your needs change? → You must go through the time, effort, and cost that's needed to make all the necessary changes
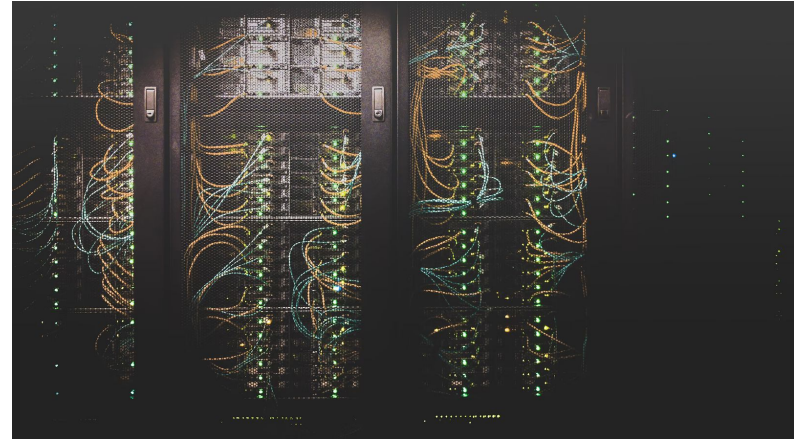
Cloud computing model

Infrastructure as software

- Cloud computing enables you to stop thinking of your infrastructure as hardware, and instead think of (and use) it as software

- If your needs change, your software can change much more quickly, easily, and cost-effectively than your hardware

What is AWS?

What is AWS?

CHALLENGERS — LEADERS

Amazon Web Services

Microsoft

Google

Alibaba Cloud

Oracle

Tencent Cloud — IBM

ABILITY TO EXECUTE

NICHE PLAYERS — VISIONARIES

COMPLETENESS OF VISION → As of July 2021 © Gartner, Inc

Gartner: 2021 Magic Quadrant for Cloud Infrastructure & Platform Services

- AWS stands for Amazon Web Services
- Leading Cloud Services Provider in the world
- More than 170 services with extensive functions in globally distributed data centers
  e.g. in Germany: Frankfurt/Main

○ Regions
○ Coming Soon

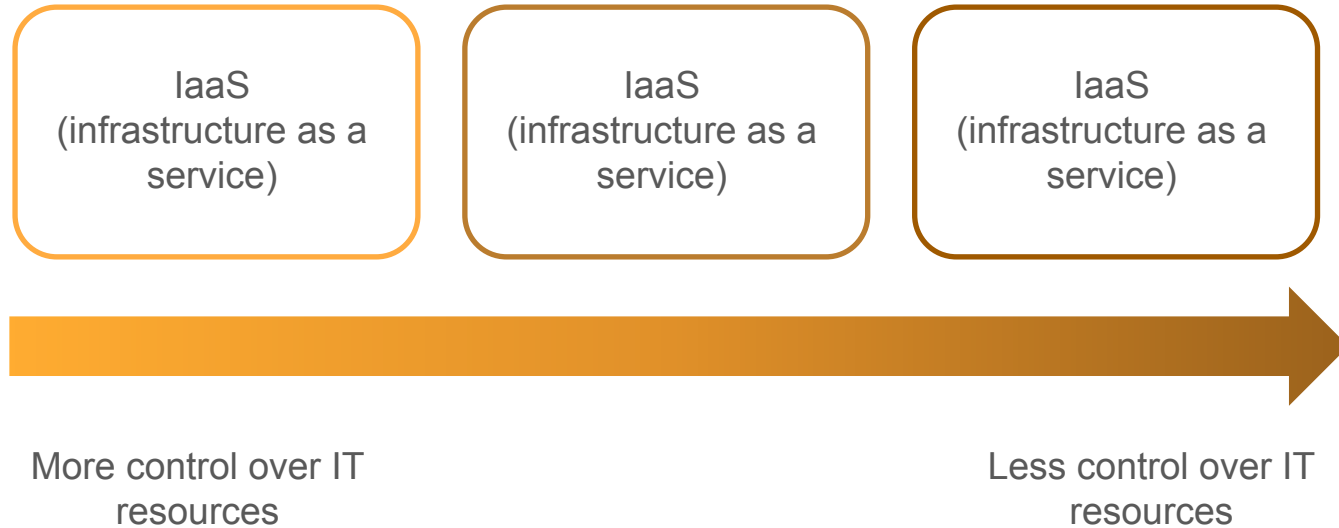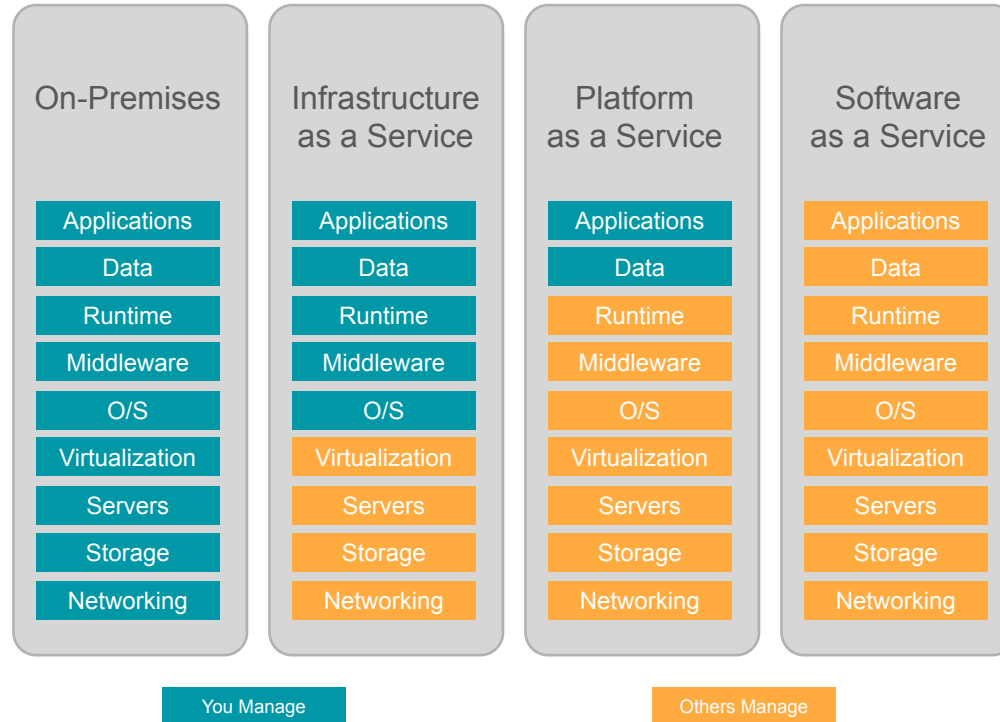AWS data centers and regions. Status: Nov 2020

What is AWS?

- AWS is providing services to a wide variety of customers
- Customers come all kind of sectors:
  - technology
  - television
  - banking
  - food manufacturing
  - governments
  - ….

Cloud Service Model

Cloud service models

Cloud service models: Who manages what?

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On-Premises	Infrastructure as a Service	Platform as a Service	Software as a Service
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

You Manage   **Others Manage**

Three Cloud Deployment Models

Cloud

Hybrid

Private cloud (on-premises

Three Cloud Deployment Models

Cloud

Hybrid

Private cloud (on-premises

- No upfront investment
- Low ongoing costs
- Focus on innovation
- Flexible capacity
- Speed and agility
- Global reach on demand

- Large initial purchase
- Labor, patches, and upgrade cycles
- Systems administration
- Fixed capacity
- Long procurement cycle and setup
- Limited geographic regions

What can you do in the cloud?

You can use cloud computing for:

- Application hosting
- Backup and storage
- Content delivery
- Websites
- Enterprise IT
- Databases
- ….

Benefits of Cloud Computing

- Reduced IT costs ☐ companies do no longer have to run an own IT datacenter

- Scalability & performance (e.g. more storage, compute, band width)

- Business Continuity > Backup/Disaster Recovery

- High availability (e.g. redundant power, networking, cooling)

- Automatic Software Updates

It is not a question if a company will use cloud services but when will a company start using cloud services and to which extent. That's why there is a high demand of skilled talents.

Checkpoint Questions.

- What is cloud computing?

- Name three benefits of cloud computing.

- What are the three cloud deployment models?

Key Takeaways

- Cloud computing is the on-demand delivery of IT resources online, with pay-as-you-go pricing

- Cloud computing enables you to think of (and use) your infrastructure as software

- The three cloud service models are infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS)

- The three cloud deployment models are cloud, hybrid, and private (or on-premises) cloud

- Almost anything that you can implement with traditional IT can also be implemented as an AWS Cloud computing service

THANK YOU

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