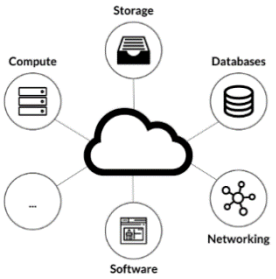
DataCamp - Azure Fundamentals

Chapter 1 – Understanding Cloud Computing

1. Indroduction to Cloud Computing

What is Cloud Computing?



- Cloud Computing is the delivery of technology services – include compute, storage, databases, networking, software, …
  - over the internet with pay-as-you-go pricing

Cloud computing vs. On-Premise

Cloud computing

- Scalable
- Fast set-up speed
- Pay-as-you-go

On-Premise

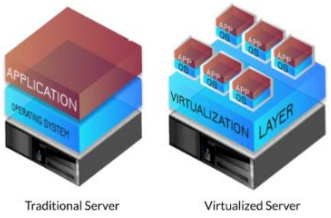
- Less scalable
- Takes time to set up
- Ongoing costs

Cloud services

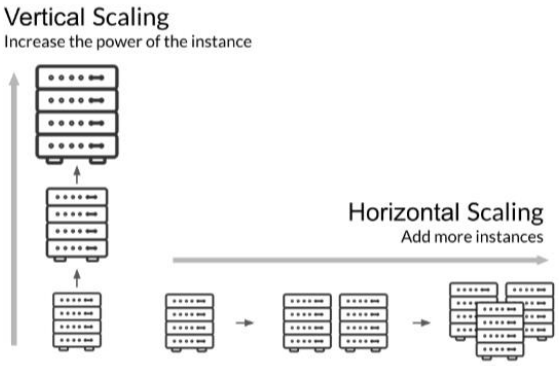
- The three basic ones are compute, storage and databases
  - Compute: provide the brains to process your workload
  - Storage: save and store data
  - Databases: store more structured sets of data

Cloud Computing characteristics

- Virtualization
  - Multiple virtual serves
  - Economies of scale



- Scalability
    - Easily add and remove resources as you need them
    - Scale resources as necessary



- Cost
    - Only pay as resources when you are using them
    - Pay-as-you-go
    - No capital expenses of buying hardware and software

- Speed
    - Immediate access to ready-to-go cloud resources
    - On-demand resourcing
    - Fast set-up time
    - Deploy services in a matter of minutes

- Performance
    - Access to fast and efficient computing resources
    - Data center: houses an organizations IT operations and equipment
    - Cloud gives access to worldwide network of data centers

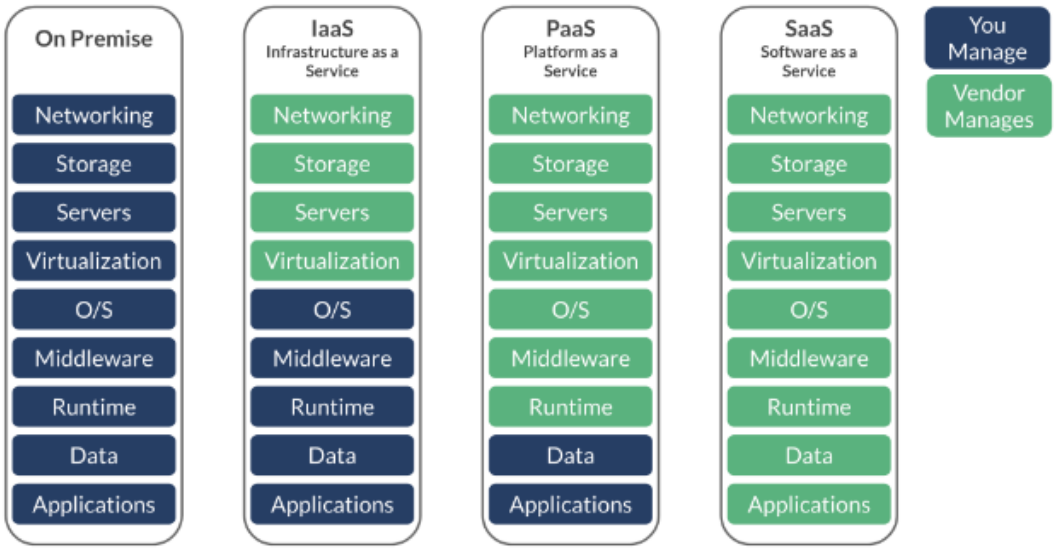
- Growth
    - Grow using a wide range of resources and services
    - Provision resources across a global network

- Reliability
    - Guaranteed durability and availability of data and services
    - Data is duplicated across data centers

- Security
    - Secure storage and management of your data
    - External party responsible for security

- ***Cloud service models***

On-premise	Cloud
Buying a car	Renting a car



	IaaS Infrastructure as a Service	**PaaS** Platform as a Service	**SaaS** Software as a Service
Definition	Cloud-based alternative to on-premise infrastructure	Hardware and software tools over the internet used to develop applications	Software available over the internet, usually for a monthly subscription fee
Advantages	Scalable alternative to expensive on-premise infrastructure	Developers don't need to start from scratch when creating applications	No need to install software on your computer
Users	System admins	Developers	End customers
Examples	Cloud server from e.g. Google Compute Engine, Microsoft Azure, Amazon Web Services	Web apps, logic apps e.g. Google App Engine, Windows Azure, AWS Elastic Beanstalk	Internet applications e.g. Google G Suite, Microsoft Office 365, Dropbox

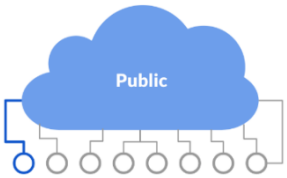
2. Cloud Deployment

Cloud Deployment Models

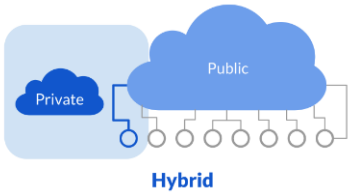
- Important decision in cloud adoption
- How much control do you need over your cloud environment?
- Three main types: **private, public,** and **hybrid**

- Is designated for exclusive use by its tenants.
- Private clouds are accessed by a network ling
  + Direct control of resources and data
  - More upfront investment

- Cloud infrastructure is shared and open for use by the general public. It's owned and managed by a cloud service provider
  + Get started quickly with minimal investment
  - Easier to scale



- Combination of the models
  - Store sensitive data on the private cloud and use application on public cloud for analytics



Regulations on the Cloud

Regulates how personal data is collected, processed, and stored from users in the EU

Example:

- Users must explicitly consent to data collection
- Notify users of any data breaches
- Personal data information must by encrypted, anonymized