

Cloud Computing System

Monday, October 24, 2022 5:10 PM

A secret warehouse full of computers is called as **data centers** or **server farms**.

Cloud Consumer

Cloud Broker

Cloud Auditor

Cloud Carrier

Cloud Provider

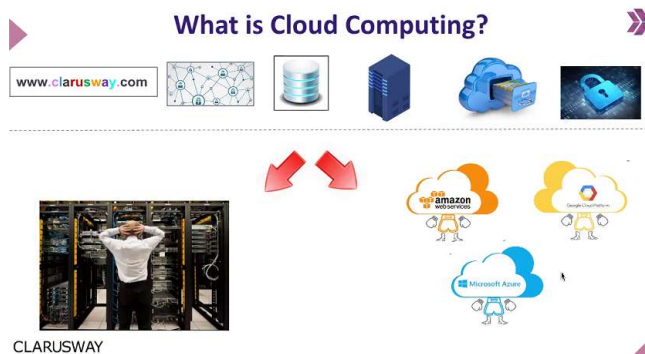
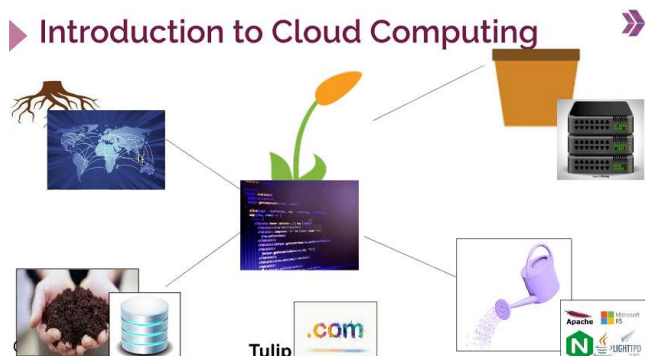
Public Clouds

Private Clouds

Community Clouds

Hybrit Cloud

The key difference between private and public clouds is that you are not responsible for managing a public cloud hosting solution.



Cloud = a supermarket for applications.

► Introduction to Cloud Computing »

What is Cloud Computing?

- The **Cloud** term refers to software and services running on the Internet, not locally on your computer.
- So you can store and access data and programs over the internet rather than the hard drive of your computer

Cloud Computing = Application running on someone else's computer

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► Introduction to Cloud Computing »

Evolution of the Cloud Computing

- In 1950, The idea of cloud computing came into the picture,
- In 1970, The concept of virtualization has evolved with the Internet,

- In 1997, Professor Ramnath Chellappa had mentioned the Cloud in an article,
- In 2002, Amazon Web Services (AWS) launched its public cloud,
- In 2008, Google announced a preview release of App Engine,
- In 2008, Microsoft launched Azure,
- In 2009, Alibaba launched Alibaba Cloud,
- In 2010, IBM introduced the IBM SmartCloud Project,
- In 2012, Oracle launched the Oracle Cloud.

Buradaki tricky point alışveriş sitelerinin olması.

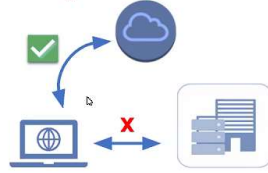
In 2002 Amazon Web Services launched its public cloud.

Cloud olmasaydı pandemide zoom bu kadar yaygın kullanılamayacaktı. Cloud aplikasyon geliştrimeyi çok hızlandırdı.

► Introduction to Cloud Computing

How Cloud Works?

- Information and data are stored on physical or virtual servers that a cloud computing service can retain and monitor.
- Instead of computer or data center, a client uses an internet connection to access the stored information on the cloud.



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► Cloud Computing Architecture

Roles of Cloud Computing



- A **Cloud Consumer** is an user of cloud products and services.
- The purveyor of products and services is the **Cloud Provider**.
- The **Cloud Broker** connects consumers to appropriate cloud providers.
- The **Cloud Auditor** conducts independent performance and security monitoring.
- The **Cloud Carrier** is the interconnect between datacenters and aggregated WANs.

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AWS den hesap alan herkes client olur.

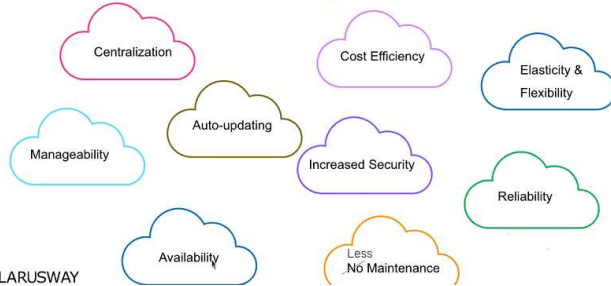
Cloud Auditor; ödeme sistemleri, sağlık ile ilgili bilgilerin depolanmasını denetleyen kuruluşlar. BTK gibi kurumlar da olabilir, bağımsız kuruluşlar da olabilir. Yöndergeleri denetleyen kişi ve kuruluşlar.

Cloud Carrier taşıeronluk yapıyor.

Auditor hem consumer hem provider denetlemesi yapar.

► Introduction to Cloud Computing

Features of the Cloud Technology



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Cloud increases the value of the work. Cloud native: Yaptığım aplikasyon AWS de çalışır demek.

Cloud Agnostic: her cloud da çalışır.

Cloud a uygun olmaması klimasız araç gibidir.

► Introduction to Cloud Computing

Disadvantages of the Cloud Technology

- Internet Dependency
- Loss of Control
- Lack of Support





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İnternete dayalı olması internet kesildiği zamanda sorunlar oluşturur.

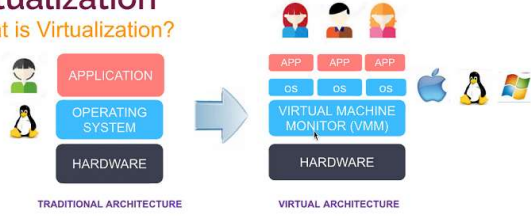
Loss of control: Kontrolün tamamı senin elinde değil.

Lack of support: Uzman desteği gerekiyor. Uzmana her zaman ulaşmak mümkün olmayabilir.

Zeitgeist: Zamanın ruhu, the spirit of the time.

► Virtualization

What is Virtualization?



- Virtualization refers to the operation of multiple operating systems called guests by sharing the same physical equipment resources.
- This will help the user to share a single physical resource instance or application with multiple users by providing multiple machines at the same time.

Virtualization sayesinde bir bilgisayar üzerinde linux, windows, ios gibi bir çok işletim sistemini çalıştırabiliyoruz.

► Virtualization

Why Virtualization?

ANALOGY



"If you only need milk, would you buy a cow?"

İlk kurulum maliyetinden kurtarıyor
Artırma ve azaltma imkanını veriyor.

SCALE OUT - SCALE DOWN



Virtualization

Type of Virtualization?



Software Virtualization



Server Virtualization



Storage Virtualization



O/S Virtualization

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► Containerization Technology

What is container?



Container technology, also simply known as just a **container**, is a method to package an application so it can be run, with its dependencies, isolated from other processes.

The major public cloud computing providers, including Amazon Web Services, Microsoft Azure and Google Cloud Platform have embraced container technology.

CARI ISWAY

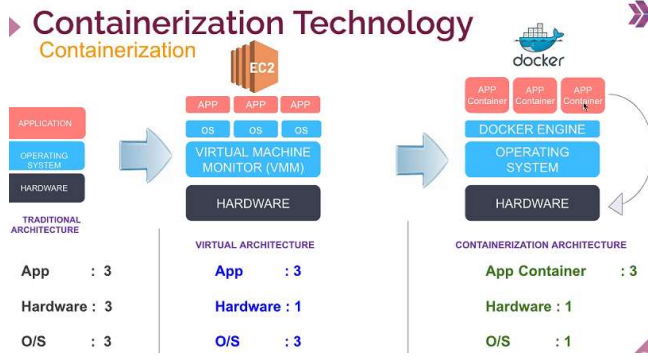
Dokkerup veya gitup gibi istasyonlar internet ortamında duruyor. Sizin aplikasyonların ziplenmiş hali orada duruyor. İstedğin zaman çağırıp kurabiliyorsun.

Olayın alt tabanı şöyle dönüyor:

Traditional architecture her aplikasyon için hardware

Virtualization tech de ise tek hardware de birden fazla opeting sistemi kurabiliyorduk

Docker engine ile operating sistemleri bire indiriyorum kendine ait olan operating sistemi aplikasyonun içine gömüyorum. Operating sistem bire düşüyor o da linux oluyor.



Docker ı biz virtualization içine kuruyoruz. Virtualization da AWS içinde var.

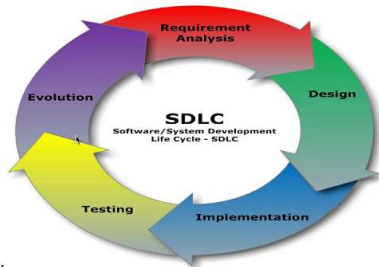
Containerization Technology

Containerization



Software Development Cycle

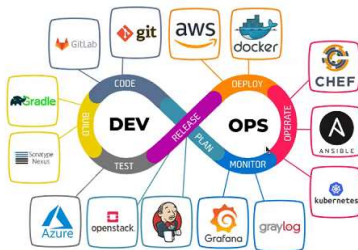
What is SDLC?



~1 API KWAY

Software Development Cycle

DevOps



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Karavanın içine gerekli olan kettle uyku tulumu çay vs her şeyi koymak built etmek
Karavanı tatil yapacağın yere götürüp koymak deploy etmek.
Tatilde kıyı kıyı gezmek tatil yapmak operate veya run etmek.

Yukarıdaki şema cloud da dönüyor. Eskiden hepsi ayrı ayrıydı. Bunların hepsi cloud da çalışıyor.

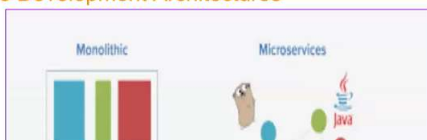
Monolithic yapı tek düze bir yapıdır.

Örneğin javada 10bin satır kod yazardı. Bir websayfasının bütün kısımları tek bir kodlama diliyle yazılırdı.

Şu anda microservices tech ; bir web sayfasının farklı kısımları farklı dillerle yazıla programcılara döndü.

Software Development Cycle

Software Development Architectures





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Microservices tech docker kullanıyor. Docker ne kullanıyor virtualization kullanıyor. O da cloud da kullanıyor.

► Software Development Cycle

Software Development Architectures



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Serverless; otlakçı sigara içen

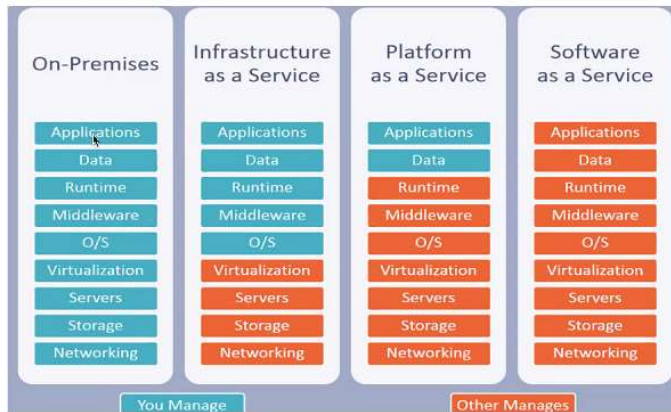
► Why Cloud Computing?

- Increases the value of the work
- Zeitgeist (The spirit of the time)
- Cost reduction (pay as you go -source optimization)
- Scalability need
- Virtualization
- Containerization Technology
- Software Development Cycle
- From Monolithic to Microservices

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► Service Models

Cloud Service Models



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► Service Models

Pizza Analogy for Service Model Comparison



- **On-Premise Model;** You take all the ingredients-Make it yourself
- **IaaS Model;** You buy some ingredients- Make it yourself
- **Paas Model;** Order pizza delivered
- **Saas Model;** Go to the pizzeria.

► Deployment Models

• Hybrid clouds



- Hybrid clouds use both private and public clouds, depending on their purpose.
- Hybrid clouds are Integrated environments of public and private infrastructure.
- For example, You can use a **Public Cloud** to interact with customers while retaining secure data via a **Private Cloud**.

ADDITIONAL

► Deployment Models

Community Cloud



- If **multiple/sister companies** share use of cloud technology, it is called Community Cloud
- A community cloud, for example, may belong to a government and can be used by different departments of that government.