

Cloud Computing

What is cc?

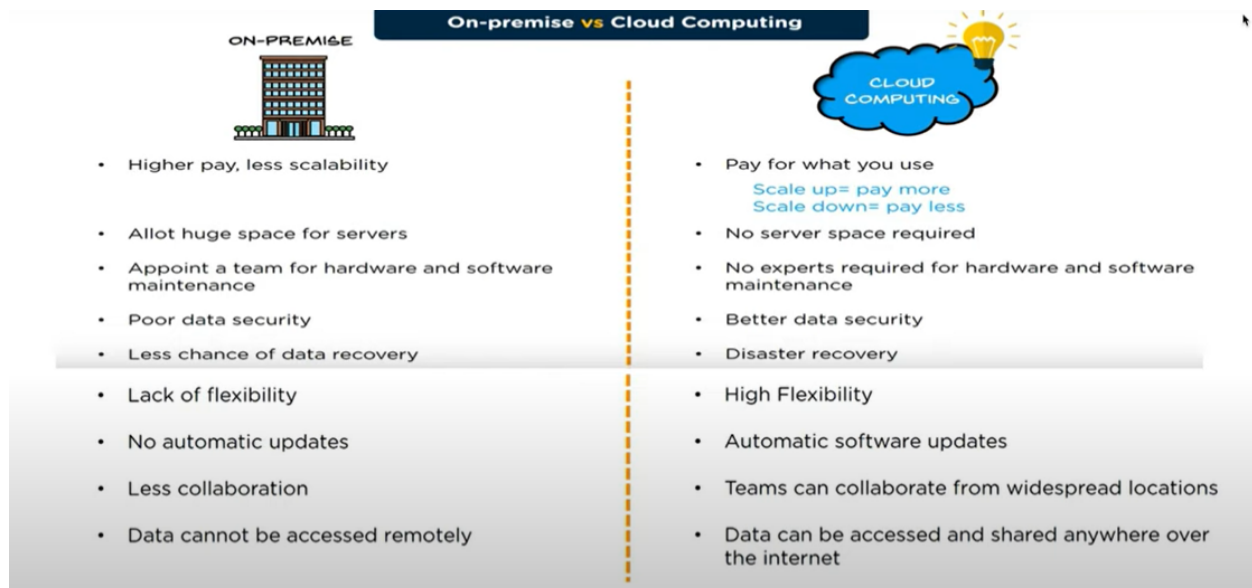
It refers to the network of remote servers that are used to store, manage, and process data over internet.

Why cloud computing?

The data is difficult to store in physical device and expensive.

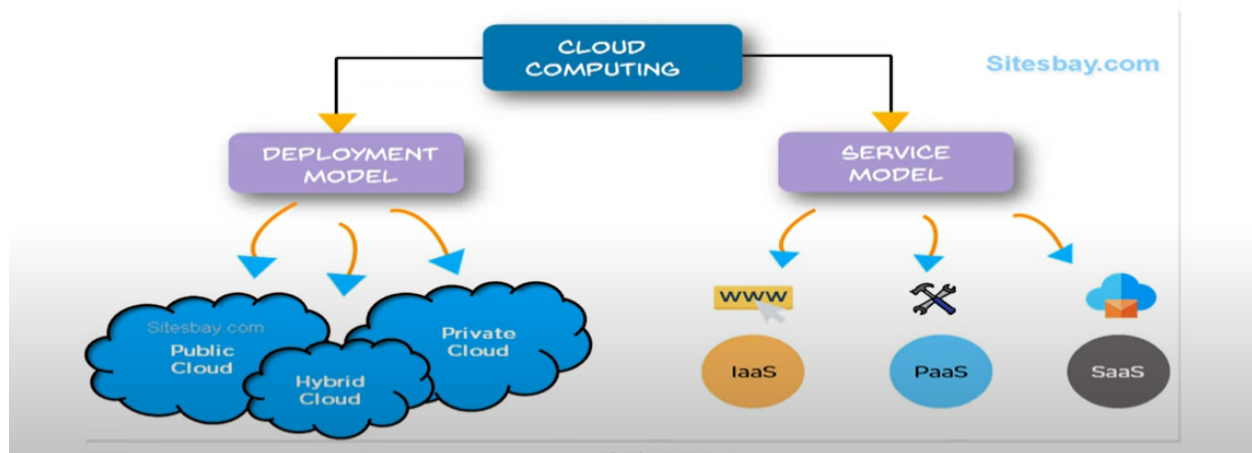
So cloud provides space, security and reduce cost of storing and manipulating

Difference between on premise and CC



Types of cloud

It is the use of remote servers on the internet to store, manage and process data rather than a local server or your personal computer.



▼ Deployment model

- Public cloud - can be accessed by everyone (aws, azure)
- Private cloud - can be accessed by only who got credentials(single organization or third party vm ware)
- Hybrid cloud - rental basis (both public and private)

▼ Service model



IAAS

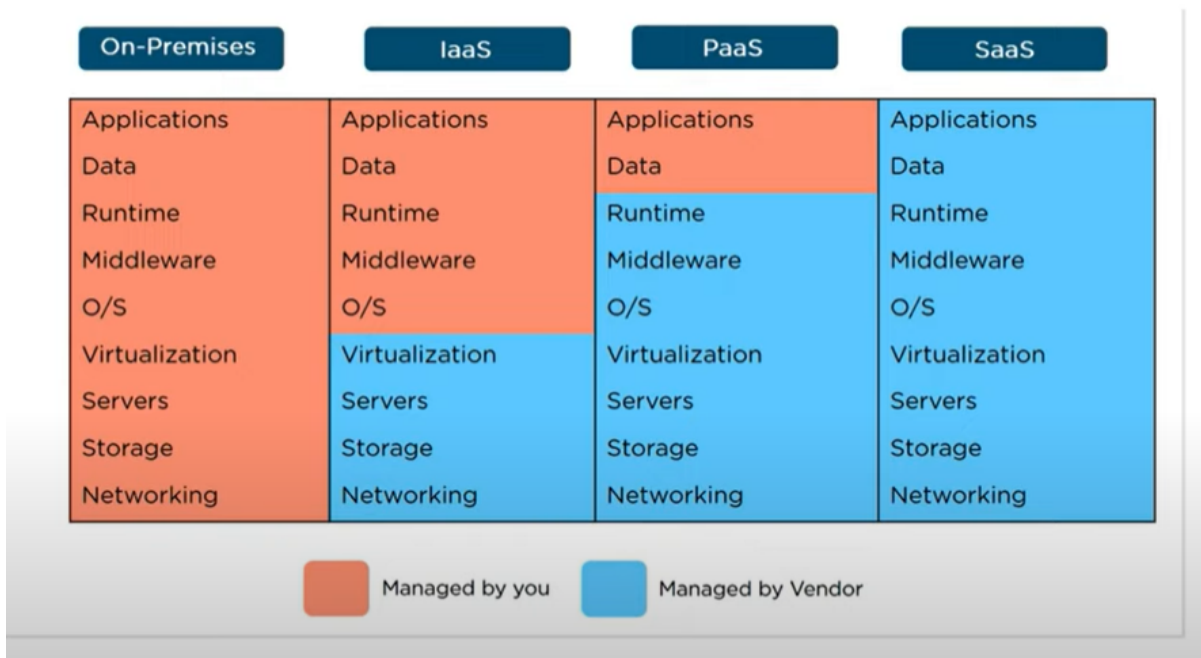
- Provides basic service for computing infrastructure
- AWS, AZURE and GOOGLE

PAAS

- provides runtime environment for developers to deploy applications

SAAS

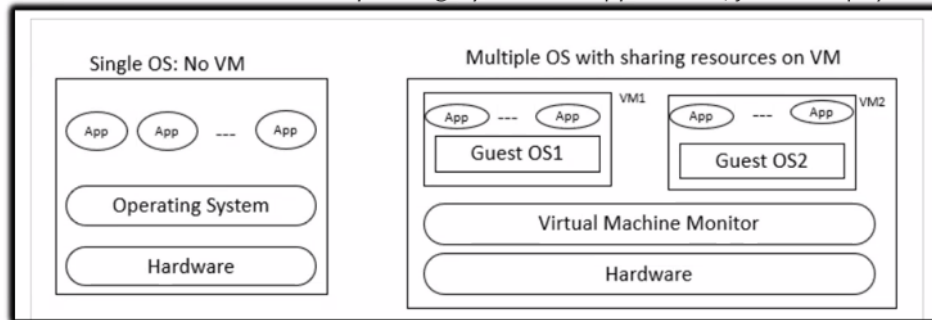
- Cloud providers host and manage the software app on a pay as you go pricing
- All software and hardware are provided and managed by vendor so you don't have to maintain anything



Virtual Machine

Virtual Machine

- A virtual machine (VM) is a software emulation of a physical computer system.
- It allows you to run multiple operating systems or instances of an operating system on a single physical machine, known as the host machine.
- Each virtual machine operates independently and has its own virtual hardware, including processors, memory, storage, and network interfaces.
- Each virtual machine can run its own operating system and applications, just like a physical computer.

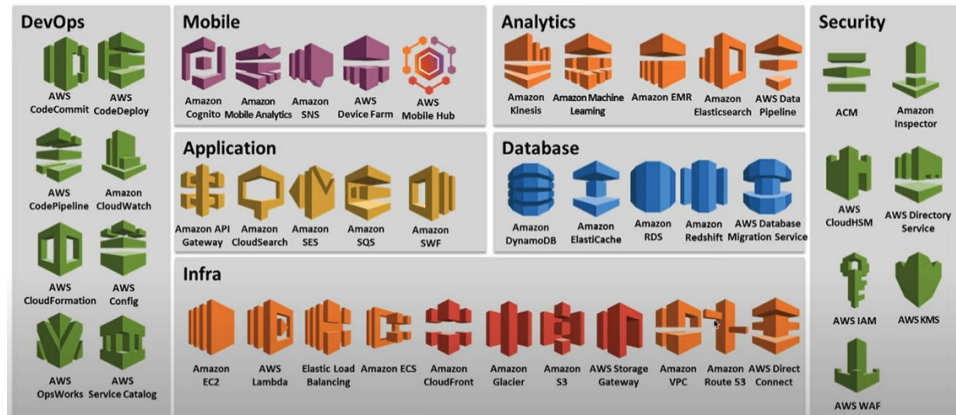


AWS

- Comprehensive platform by amazon
- Subscription type
- Provides range such as storage, computing power, database, networking, analytics, machine learning, AI, IOT and security
- Multiple regions contains multiple data centers
- Allows customers to deploy app in various location

Data Center

- Physical location where org store manage and process large amounts of data
- One zones gets crashed another will backup



Services provided by amazon

- S3 is used to store data
- VPC is for networking
- IAM for security level
- SNS for notification
- RDS for database storage
- Popular virtual machine Virtual Box

Elastic compute cloud (ec2)

- Virtual Machine
 - Software emulation of a physical system
 - Allows us to run multiple OS of an operating system on a single physical machine known as host machine
 - Operates independently, has own virtual hardware like processor, memory storage and network interfaces
 - Just like a computer

- Ec2
 - Virtual Server provided by aws for rental
 - Easy to scale (we can expand server using auto scaling if needed)
 - we pay for what we use
 - purpose like web hosting, running app, processing and deploying for software development project
 - we need ,AMI (amazon machine image), Instance type, security cloud, VPC virtual private cloud, key pair.
 - We can also called as **Instances**

AMI (Amazon Machine Image)

- template or snapshot of virtual machine
- we can create own AMI
- Includes operating system, pre installed software ,configure, any additional data associated with instance , access permission, volume info
- provides variety of pre config ami with different OS such as(database, webserver, development environments)

- Key pair security credentials

- Public key on instance

- VPC

- own ip address, own subnets ,own route and network gateways

- default vpc don't have to change

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