Building Complete IOT Solution with ESP32 and AWS

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Chapter
05

Cloud Computing (AWS)

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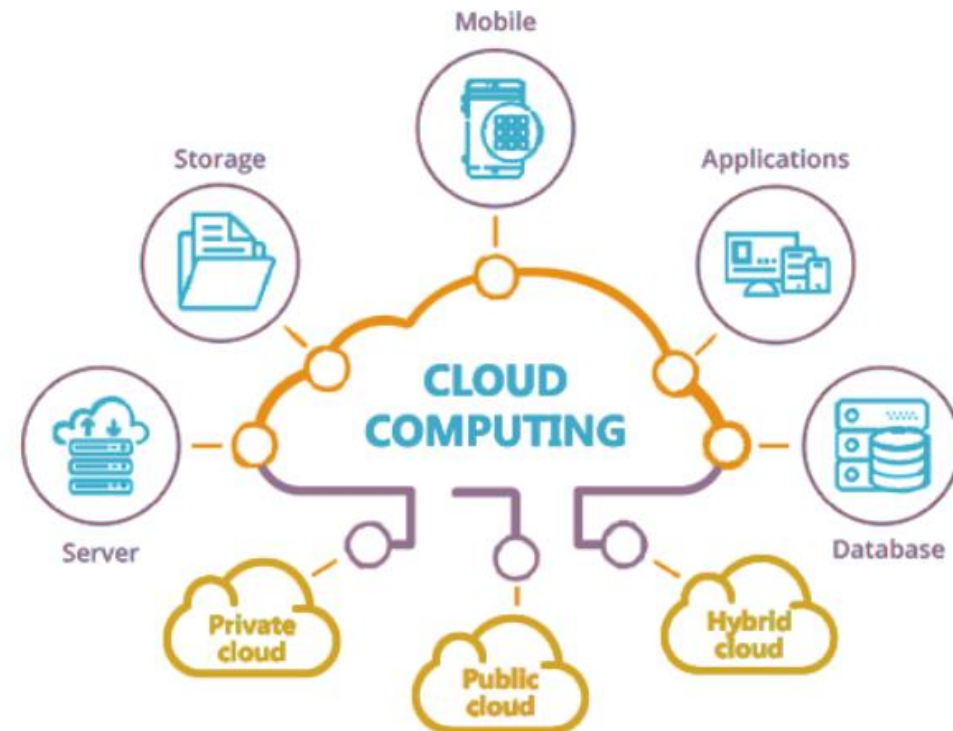
Cloud Computing

Cloud computing is the delivery of different services through the Internet. Services are tasks that you Personal Computer (PC) could do!

Tools and Applications:

- Data Storage / Backup
- Servers / Virtual Desktops
- Databases
- Networking
- Software
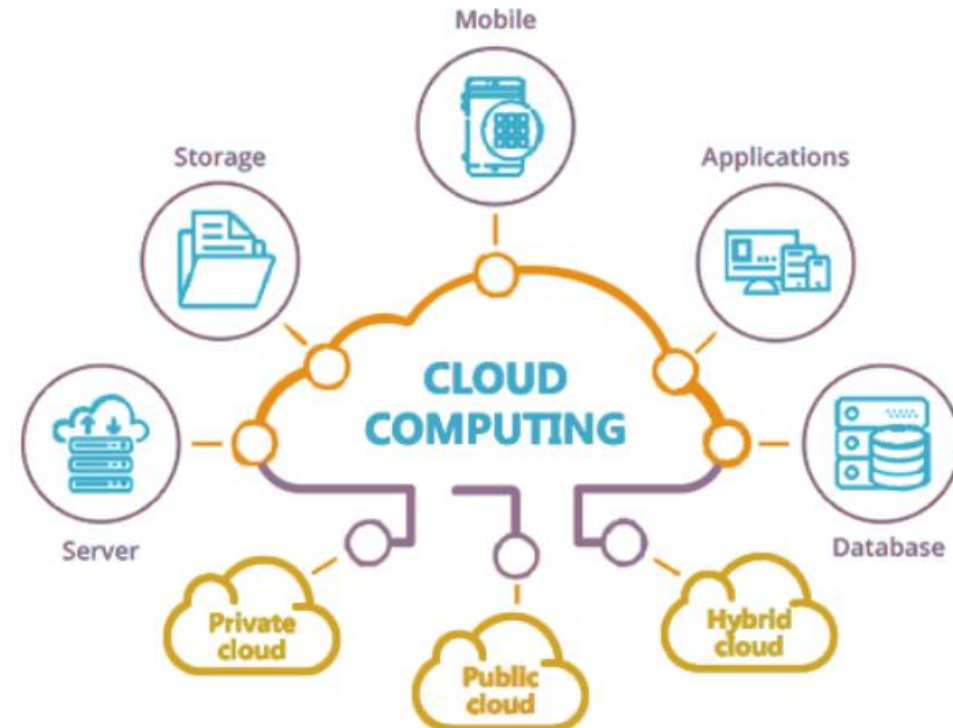- Data Analytics
- Machine Learning
- IoT

https://medium.com/@colinbaird_51123/a-primer-on-cloud-computing-9a34e90303c8

Cloud Computing

Cloud computing is the delivery of different services through the Internet.
Services are tasks that you Personal Computer (PC) could do!

Type of Offering

- **Public (AWS, AZURE, ...):**
In physical hardware levels, customers may share the same devices

- **Private:**
All resources are dedicated to single customer

- **Hybrid:**
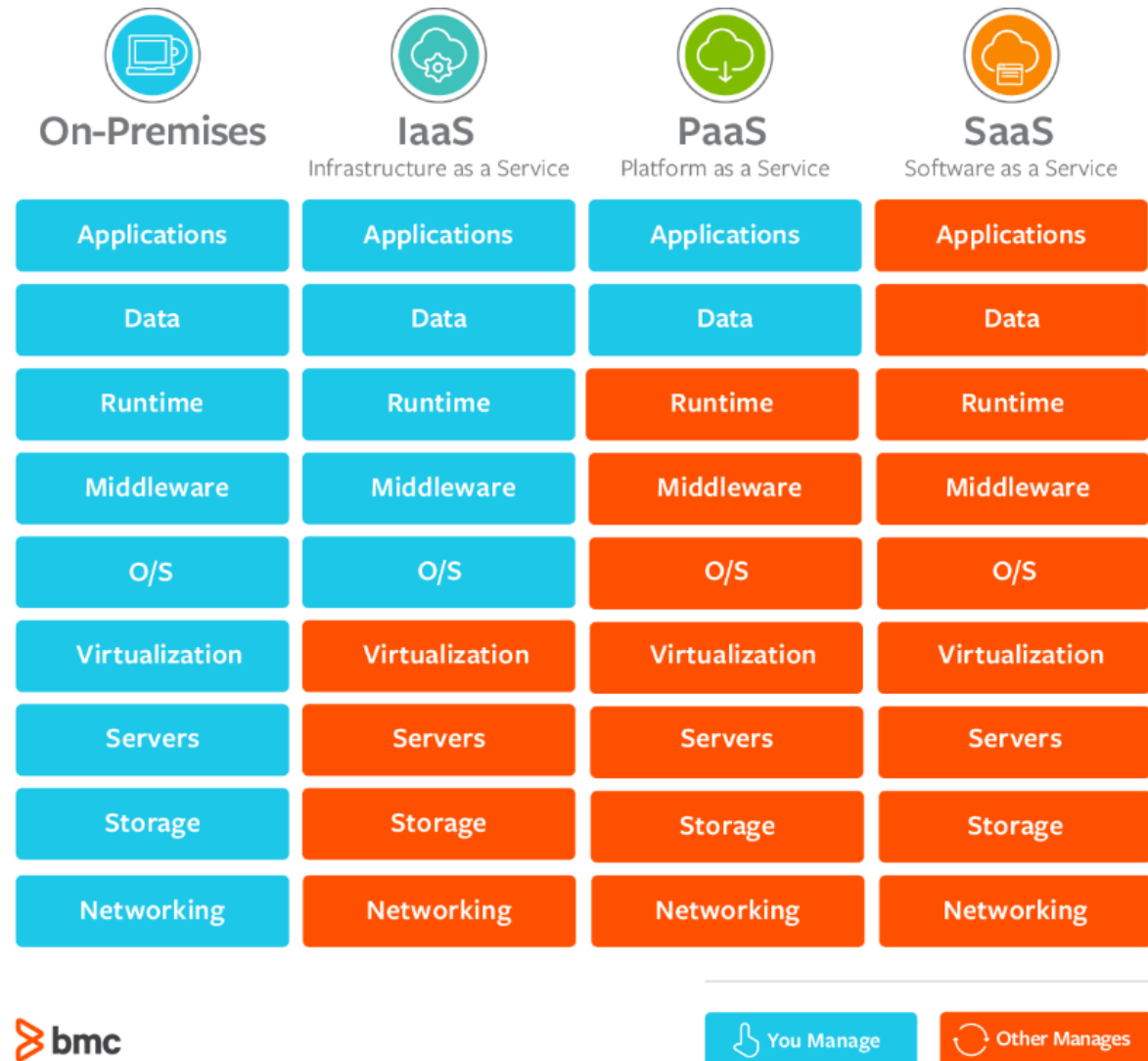Non-Critical – Public
        Critical – Private

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Cloud Computing

Type of services:

- **Infrastructure-as-a-Service (Iaas)**
rent the computer architecture
But you provide everything else like the operating system, drivers and applications etc

- **Platform-as-a-Service (PaaS)**
you now only need to provide the application and data

- **Software-as-a-Service (SaaS)**
Just focus on your application/software
Back-end is taken care of.

On-Premises	IaaS Infrastructure as a Service	PaaS Platform as a Service	SaaS 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

bmc

You Manage Other Manages

https://www.bmc.com/blogs/saas-vs-paas-vs-iaas-whats-the-difference-and-how-to-choose/

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Cloud Computing

Examples:

- **Banks (Financial Services)**
Real-Time fraud detection based on transactions, type of purchase, etc.

- **Video Game Makers**
Run their video game on cloud for **online gaming**

- **Smart home solutions**
Allow communication between **sensors** and **consumers**
Provide analytics on consumer behaviors at home (monitoring, alerting, etc.)

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Cloud Computing

Benefits

- **More flexibility / Scalability**

- **Reduce Cost / Less Upfront Cost**

- **Access globally**

- **Faster and Easier**