Software as a Service (SaaS)

- Users connect to & use cloud based apps over the internet; For example, MS office, Gmail

C, S

Responsibility	SAAS	PAAS	IAAS	On premise
• Information & data	C	C	C	C
• Devices	C	C	C	C
• Accounts & identities	C	C	C	C
• Identity & infrastructure	S	S	C	C
• Appln	N.S	S	C	C
• Network control	NS	S	C	C
• Operating system	NS	NS	C	C
• Physical host	NS	NS	NS	C
• Physical network	NS	NS	NS	C
• Physical datacenter	NS	NS	NS	C

Responsibility always maintained by customer

Responsibility varies by type

Responsibility transfers to cloud provider

IAAS
Most flexible
Configure & manage hardware appn

PAAS
• Focus on app development
Platform management is handled by cloud provider

SAAS
• pay as you go
• pay for the software in their subscription model

AWS ⟶

AWS Compute Service

EC2	Containers	Serverless	On premises & Edge	Cost
• EC2 (Amazon EC2)	• ECS	AWS Fargate	AWS Local zones	AWS Savings Plan
Autoscaling	• ECS anywhere	AWS Lambda	AWS Dedicated local zones	AWS compute optimizer
EC2 image builder	• EKS		AWS outposts	Amazon EC2 Spot instances
Amazon lightsail	• EKS anywhere		AWS wavelength	
	• Elastic container registry			
	• AWS batch			

Elastic Load Balancing (Analyses incoming connection & sees its status ex in bank software counter)

- Appn Load Balancer
- Network Load Balancer
- Gateway Load Balancer

Data protection
AWS Backup
AWS Elastic Disaster Recovery

Data Storage

Block	File		Object
Amazon EBS	Amazon FSx family	Amazon EFS	Amazon S3 & S3 glacier

Data in motion

AWS Transfer family
AWS Snow family
AWS Storage Gateway
AWS Data Sync
Amazon File cache

Data and work

Analytics, machine learning, visualization, streaming.

AWS SERVERLESS CLOUD computing Workshop

Cloud computing

Delivery of computing services over the internet enabling faster, innovation, flexible, resources & economics of scale

compute	networking	storage	? → Defines cloud computing power

compute → Power (eco)

VM → instance

Private cloud

organisations create cloud environment

- Data → datacenter
- organisation are responsibles for operate the services they provide
- Not provide access outside the organization
- orgⁿ resp for hardware & maintenance updates
  - complete control over resources & security
  - Hardware must be purchased for startup & maintenance

Public cloud

- owned by cloud services or hosting provide
- Resources & services to multiple organization & users
- Accessed via secure network connection over the internet
  - No capital expenditures to scale up
  - Appⁿ can be quickly provisioned & deprovisioned
  - pay only for what they use

Hybrid cloud

public + private

- flexibility
- Determine where to run their appⁿ
- orgⁿ control security compliance, or legal requirement

capital expenditure	operational expenditure
• The upfront spending of money on physical infrastructure	• Spend on products & services as needed, pay-as-you-go
• costs from CapEx has a value that reduces over a time	• Get billed immediately.

Consumption based model

Cloud service providers operate on a consumption-based model, which means that end users only pay for resources that they ~~alloc~~ use

- Better cost prediction
- prices for individual resources
- billing based on resources

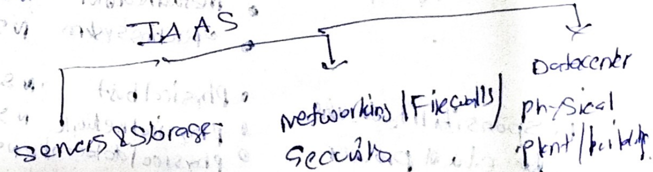
Cloud Benefits

- High availability
- Elasticity
- Scalability
- Reliability
- predictability
- Security
- Governance
- Manageability

Cloud Service Types

IaaS

Build pay as you go IT infrastructure by renting server, virtual machines, storage, networks & operating system from a cloud provider.



Platform as a service

Provides an environment for building, testing and deploying software appⁿ, without focussing on managing underlying infrastructure.