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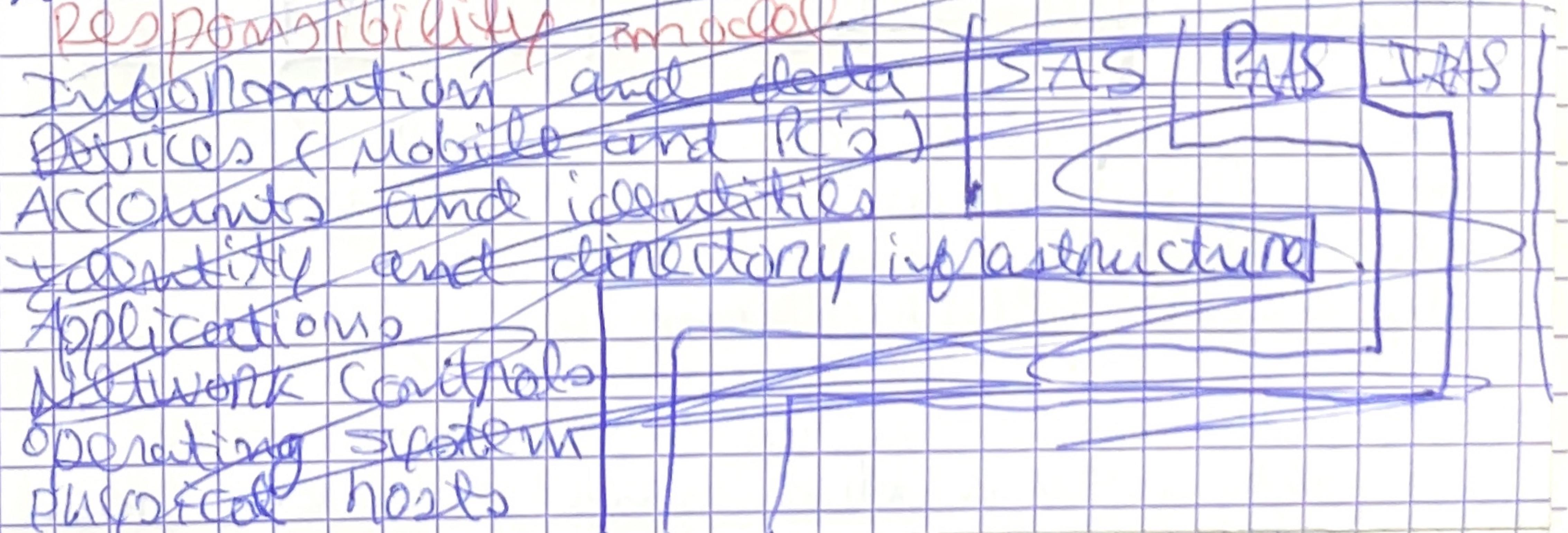
Introduction to cloud computing

- Learning objectives
 - Define cloud computing
 - Describe the shared responsibility model.
 - Define cloud models, including public, private and hybrid.
 - Identify appropriate use cases for each cloud model.
 - Describe the consumption-based model.
 - Compare cloud pricing models.

What is cloud computing?

- Delivering of computer services over the internet.
 - This common services include common IT infrastructures such as virtual machines, storage, databases and networking.
 - Also offers AI and IoT services.
 - with cloud there are no constraints in terms of what can you build and what you cannot build. If you need more resources you can just add them because it works through the internet.
 - You request and receive resources as you need paying only what you use.

Responsibility model



	SaaS	PaaS	IaaS	on-prem.
Physical network	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical datacenters	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Microsoft customers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shared	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information and data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Devices (Mobile and PCs)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Accounts and identities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Identity and directory infra-structure	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Applications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Network controls	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Operative system	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Physical Network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Physical Datacenter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Physical Hosts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SaaS - software as a service

PaaS - platform as a service

IaaS - Infrastructure as a service
on-prem - everything in your nice

- You are always responsible
for the information and data stored

in the cloud, devices that are used to connect to your cloud are used to connect to your accounts and identities of the people within organization.

The cloud provider is always responsible for the physical datacenter, the physical network and the physical hosts.

The service model will change the responsibility over operating system, applications and infrastructure.

Cloud Models:

* Private Cloud

- Your own datacenter or a datacenter of a third party dedicated just for you.
- More control
- Greater costs
- Fewer benefits in comparison to public.

* Public Cloud

- Maintained and controlled by a third party
- Publicly available in terms of services to everyone.

* Hybrid Cloud

- Usually used to complement private cloud resources when they are lacking.
- This increase of resources can be temporary just when it needs to

Multi-cloud

- when you use multiple cloud providers, usually because providers have multiple features that are different from each other.

Azure ARC

- set of technologies that you can use to manage your cloud which can be either public, private and multi, it does not matter.

Azure VMware Solutions

- if you want to migrate from a VMware private cloud to a public or hybrid cloud.

Describe consumption-based model

- costs are calculated using CapEx (capital expenditure) and OpEx (operational expenditure).
 - CapEx (Capital expenditure)
 - one time, up-front expenditure to purchase tangible resources (parking lot, datacenter, vehicle, etc...).
 - OpEx (operational expenditure).
 - spending money over time of running things like (datacenter, vehicles, etc..).
 - cloud computing falls to the category of OpEx. You pay for what you use, so if you use less resources one month you pay less.
 - benefits
 - NB upfront costs
 - no need to purchase and manage costly infrastructure that users might not use to its fullest.
 - pay for more resources when you need them.

needed.

- stop paying for resources that you no longer need.

Compare cloud pricing models

- cloud computing is pay as you go.
- It helps: Plan and manage operating costs, run your infrastructure more effectively and scale as your business needs change.