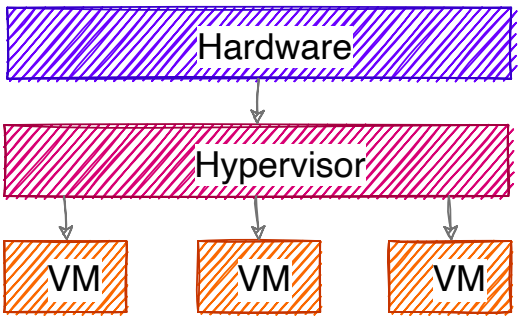
1. Cloud Computing

The **Cloud** is a **remote pool of on-demand, shared resources** including Compute, Storage, Database and Networking (sometimes also Machine Learning and AI resources). These resources can be **rapidly deployed at scale**.

Virtualisation

Used in on-premise data centres for a long time. It means that multiple **virtual machines** share the same physical hardware and resources.

Hypervisor



Software that enables the sharing of physical resources between virutal machines and handles accessß

Benefits of Virtualization

- Reduced capital expenditure and running costs
- Smaller carbon footprint
- Optimizes resources

Cloud Resources

Compute

The "Brains" to process the workload

Storage

For saving and storing data. Consists of:

- Server harddisks (local storage)
- Network attached storage (NAS)
- High-speed Storage Area Network (SAN)

Database

Persist structured sets of data used by your app

Network

Connects all other resources together. Includes:

- Routers to route traffic
- Firewalls to allow or deny traffic

Summary

The Cloud is a **remote pool of on-demand shared resources**. Resources used can be scaled up or down without the need for organizations to buy physical servers and resources. This also eliminates the cost of cooling and maintaining them.