

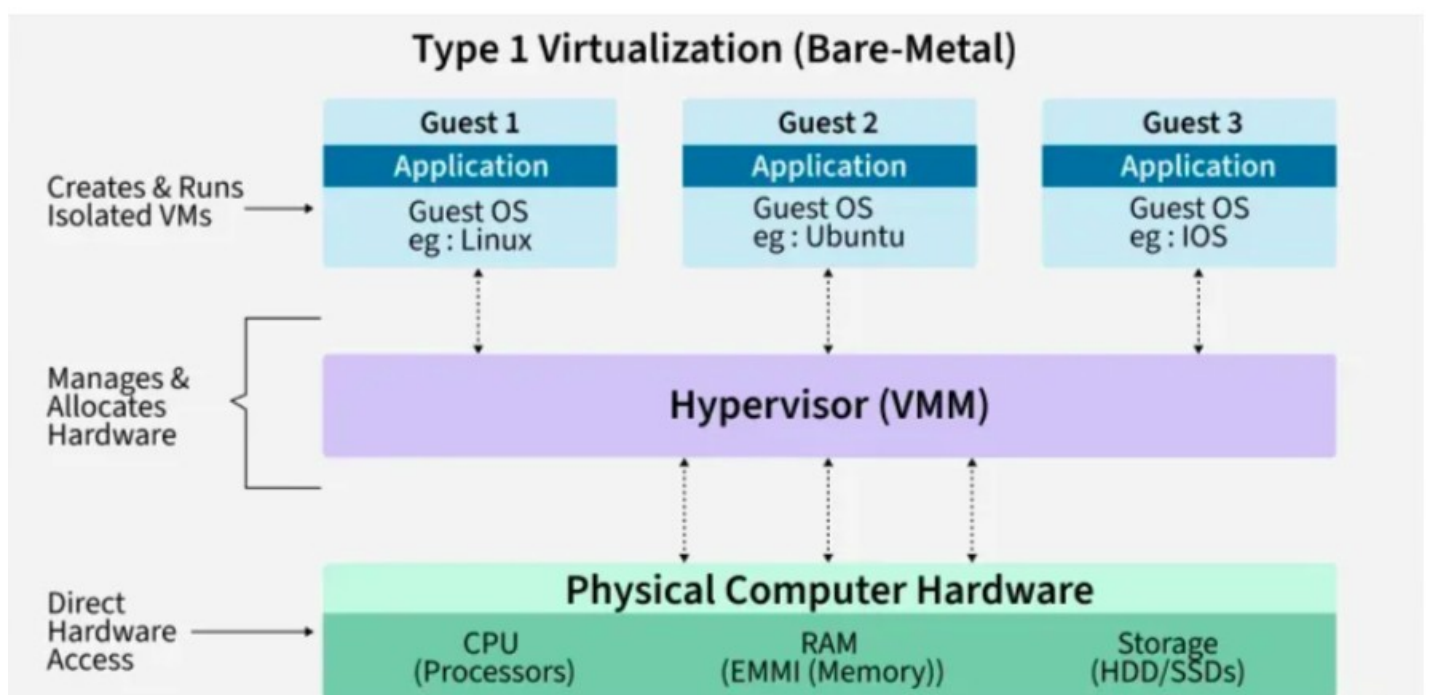
# Evolution of Computing

## A) Dedicated Server(Physical Server):-

- **Wholly utilized by a single customer.**
- You've to guess your capacity.
- Replacing a server is very difficult.
- You can't vertical scale, you need a manual migration.
- You'll overpay for underutilized server.
- You're limited by your **host operating system**.
- Multiple apps can result in conflicts in resource sharing.
- You've a guarantee of security, privacy, and full utility of underlying resources.

## B) Virtual Machines(VM):-

- **Run multiple Virtual Machines on one machine.**
- **Hypervisor** is the software layer that lets you run the VMs..
- A physical server shared by multiple customers.
- You are to pay for a fraction of the server.
- You'll overpay for underutilized VM.
- You're limited by your **Guest operating system**.
- Multiple apps on single VM can result in conflicts in resource sharing.
- Easy to export or import images for migration.
- Easy to scale either horizontal or vertical.



### C) Containers:-

- **VM running multiple containers.**
- **Docker Deamon** is the software layer that lets you run the multiple containers.
- You can maximize the utilize of the available capacity which is more cost effective.
- Your containers share the same underlying OS so containers are more efficient than multiple VMs.
- Multiple apps can run side by side w/o being limited to the same OS requirements and will not cause conflicts during resource sharing.

### D) Functions:-

- Are managed VMs running managed containers.
- Known as **serverless compute**.
- Choose the amount of memory and location.
- Very cost effective. Only pay for the time code is running

