

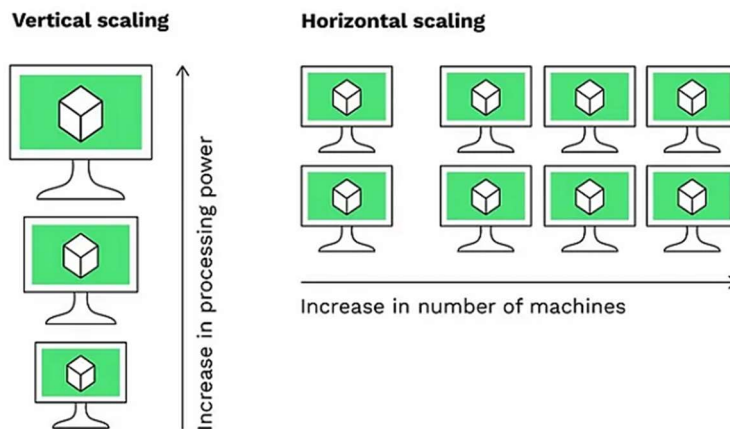
LEC # 07

Docker

Horizontal Scaling and Vertical Scaling

While horizontal scaling refers to adding additional nodes, vertical scaling describes adding more power to your current machines. For instance, if your server requires more processing power, vertical scaling would mean upgrading the CPUs. You can also vertically scale the memory, storage, or network speed.

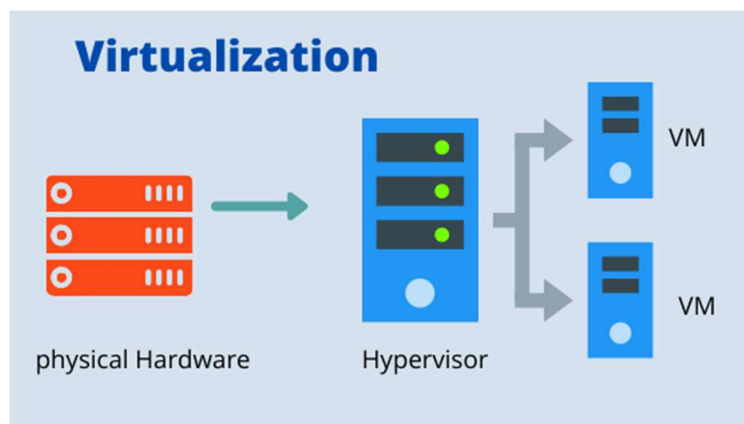
Scalability



Virtualization

Virtualization – New operating system installed in base operating system (windows) using vm ware.

Virtualization is technology that you can use to create virtual representations of servers, storage, networks, and other physical machines. Virtual software mimics the functions of physical hardware to run multiple virtual machines simultaneously on a single physical machine.



Problem of delicate hardware in virtualization – hard disk space is fixed if it is use or not.

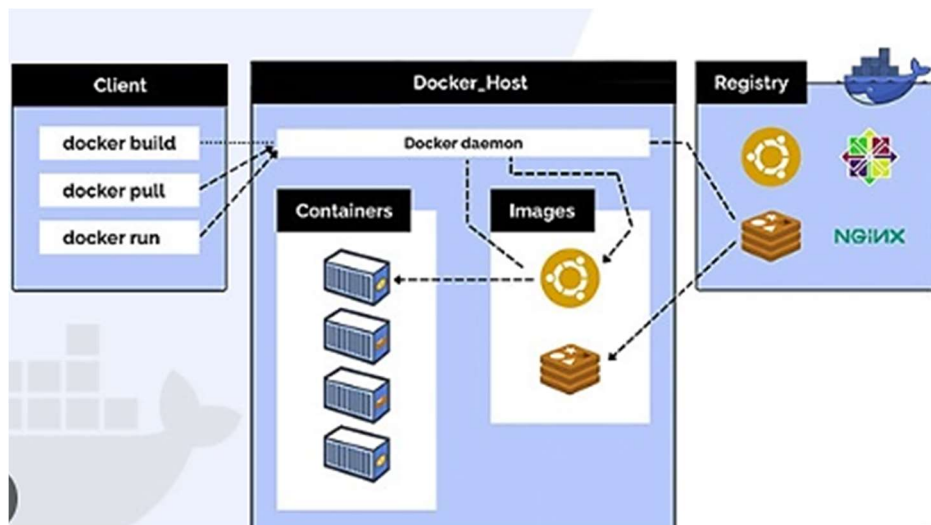
VMware virtualizes

VMware virtualizes physical computers using its core hypervisor product. A hypervisor is a thin layer of software that interacts with the underlying resources of a physical computer (called the host) and allocates those resources to other operating systems (known as guests).

Docker

Docker is a set of platform as a service products that use OS-level virtualization to deliver software in packages called containers. The service has both free and premium tiers.

- It use cutting edge kernel of base operating system.
- It consume ram and hardware in running time.
- Core component of docker is – container



Components of Docker

Note:

- Docker Hub – for container management – where all images are present
- PyPi – where python packages are present

Docker Hub

Docker Hub is a container registry built for developers and open source contributors to find, use, and share their container images. With Hub, developers can host public repos that can be used for free, or private repos for teams and enterprises.

- Docker run – to run container – docker run image name – latests / tag / file directory
- Single hyphen means – search character by character – e.g. Search Pakistan word by word
- Double hyphen means – search whole term – e.g. Search whole word Pakistan