Project Design Phase-II

Cloud deployement

DATE	06 May 2023
Team ID	NM2023TMID18418
Project Name	CancerVision: Advanced Breast Cancer Prediction with Deep Learning

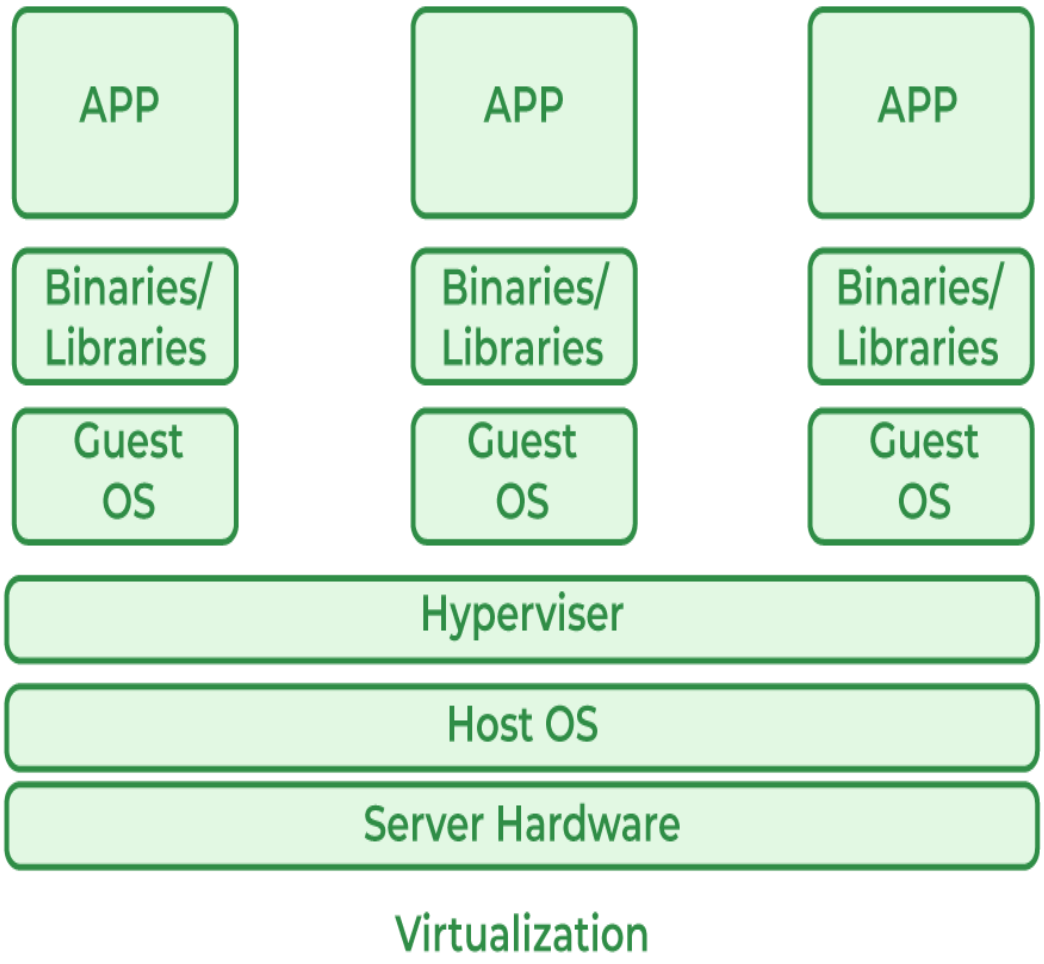
Define cloud deployement :

Cloud deployment is the process of deploying an application through one or more hosting models—software as a service (SaaS), platform as a service (PaaS) and/or infrastructure as a service (IaaS)—that leverage the cloud. This includes architecting, planning, implementing and operating workloads on cloud.

Virtualization is a technique how to separate a service from the underlying physical delivery of that service. It is the process of creating a virtual version of something like computer hardware. It was initially developed during the mainframe era. It involves using specialized software to create a virtual or software-created version of a computing resource rather than the actual version of the same resource. With the help of Virtualization, multiple operating systems and applications can run on the same machine and its same hardware at the same time, increasing the utilization and flexibility of hardware.

In other words, one of the main cost-effective, hardware-reducing, and energy-saving techniques used by cloud providers is Virtualization. Virtualization allows sharing of a single physical instance of a resource or an application among multiple customers and organizations at one time. It does this by assigning a logical name to physical storage and

providing a pointer to that physical resource on demand. The term virtualization is often synonymous with hardware virtualization, which plays a fundamental role in efficiently delivering Infrastructure-as-a-Service (IaaS) solutions for cloud computing. Moreover, virtualization technologies provide a virtual environment for not only executing applications but also for storage, memory, and networking.



Virtualization

Host Machine: The machine on which the virtual machine is going to be built is known as Host Machine.

Guest Machine: The virtual machine is referred to as a Guest Machine.

Faster and simplified deployments. Automate builds that deploy code, databases and application releases, including resource provisioning.

Cost savings. Control costs using consumption-based pricing and eliminate capex-heavy on-premises environments.

Platform for growth. Leverage the global infrastructure provided by cloud service providers (CSPs) to seamlessly expand the business into other geographies.

New digital business models. Exploit the continuous release of features and services by CSPs, incubate new technologies and innovate digital business models.

Business resiliency. Architect for the availability and fault-tolerance CSPs offer and ensure disaster recovery and business continuity of applications to make the business resilient.

Agility and scalability. Use autoscaling and scalability to meet peak demands of the business without provisioning for excess capacity.

Geographic reach. Access applications from any location, on any device, leveraging the connectivity backbone of CSPs.

Operational efficiency. Use the inherent automation enabled by cloud to increase operational efficiency and reduce human effort.

A competitive edge. Leverage infrastructure as code and development, security and operations (DevSecOps) to reduce the time to market for new features and stay ahead of the competition.

Empowered users. Increase productivity by empowering users with self-service options on cloud, such as portals, DevOps pipelines and executive and operational dashboards.