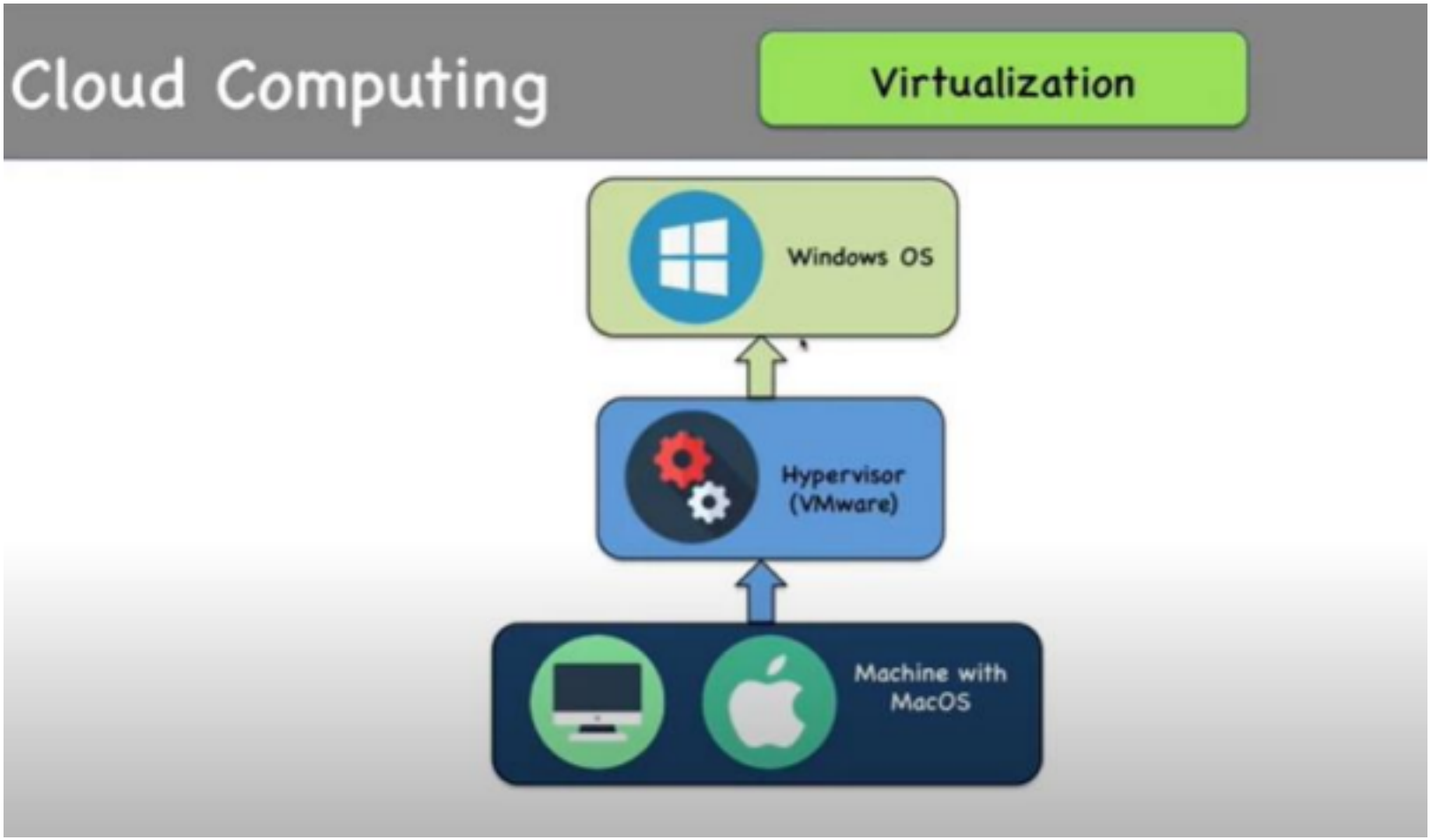
Virtualization



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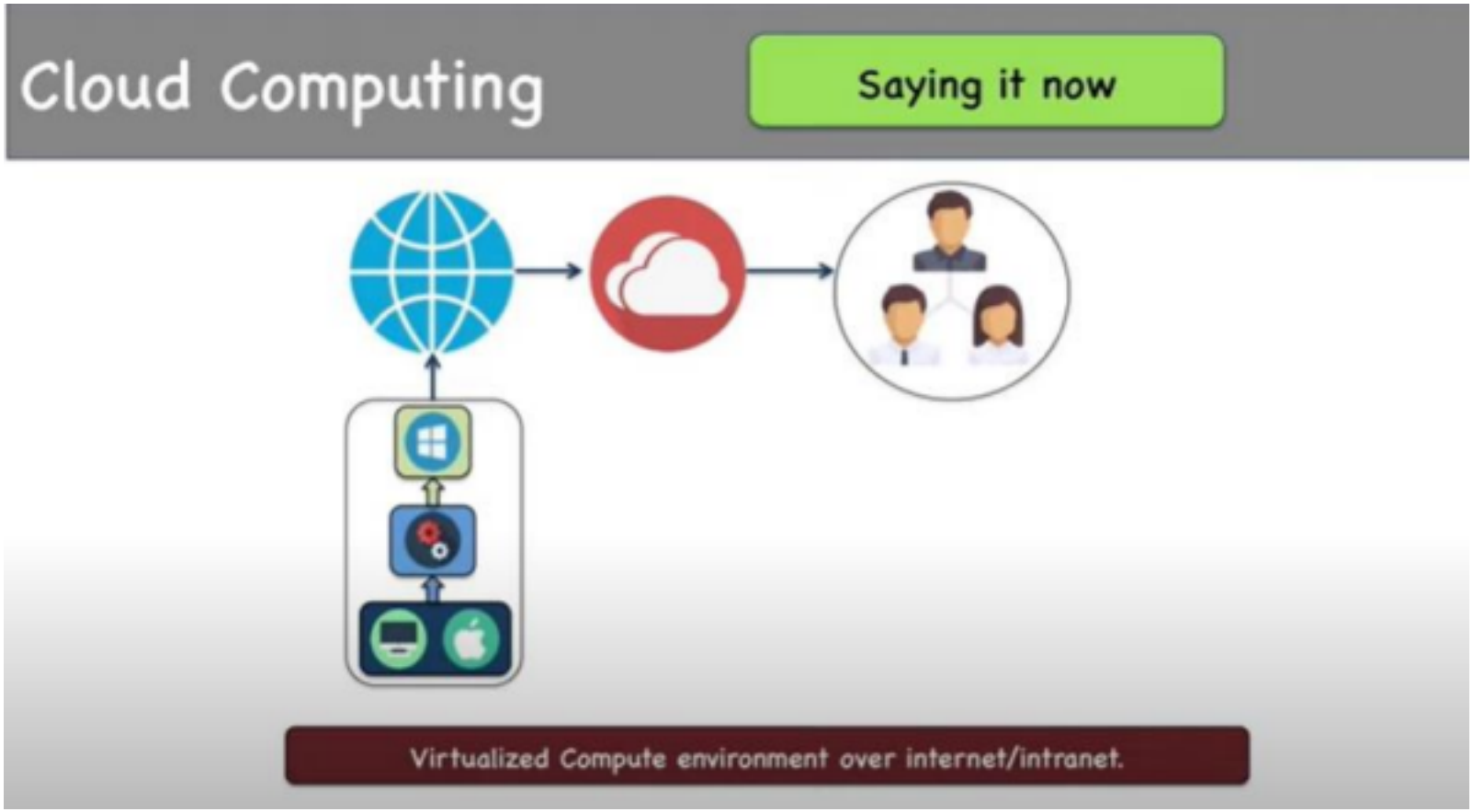
Virtualization

- The machine on which the virtual machine is created is known as host machine
- Virtual machine ->guest machine.
- This virtual machine is managed by a software or firmware, which is known as hypervisor.

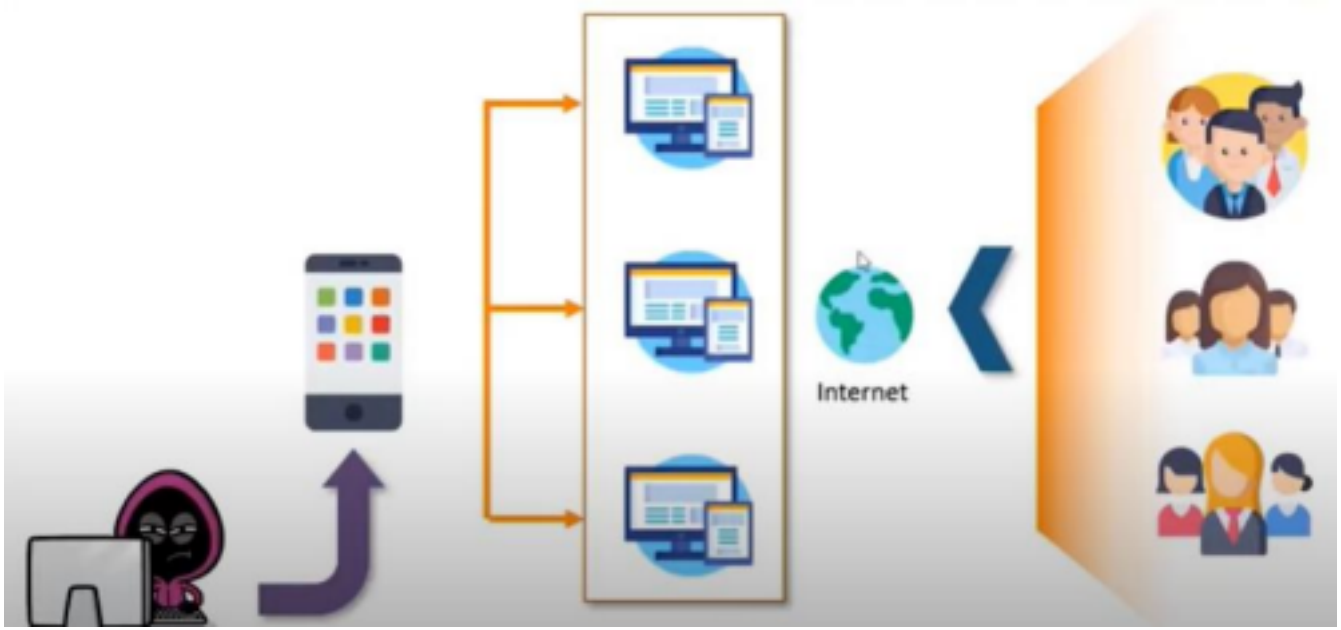
Cloud Computing

- Cloud Computing =Virtualization +Internet



Role of Cloud Service Providers

- For any app/website Need to purchase a server and create all configurations. Need a teem to manage these servers. Need to increase the server as no of users increases.To avoid all these: we will go to AWS cloud and launch stack of servers. No need to buy, we can rent them. No infra headache, can focus on app development. AWS will manage scalability, security patch, networking, up gradation of hardware. Cost is also low.



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Cloud Service Providers


Alibaba Cloud
amazon
web services
Google Cloud Platform
Liquid Web
vmware
salesforce
Azure
ORACLE
CLOUD

Cloud Products

Virtualization

Virtualization is the ability that allows sharing the physical instance of a single application or resource among multiple organizations or users.

Types of virtualization

- Hardware Virtualization
- Software Virtualization
- Server Virtualization
- Storage Virtualization

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Virtualization Softwares

Marketplace offerings

Freely Available

- Sun's Virtual Box
- Microsoft Virtual Pc
- Xen 3.0 (open source)
- Wine
- DOSBox

Commercial

- Microsoft Virtual Server
- Vmware Workstation
- Vmware Server

Hardware virtualization

- Virtual machine software installs in the hardware system and then it is known as hardware virtualization.
- It consists of a hypervisor which use to control and monitor the process, memory, and other hardware resources.
- After the completion of hardware virtualization process, the user can install the different operating system in it and with this platform different application can use.

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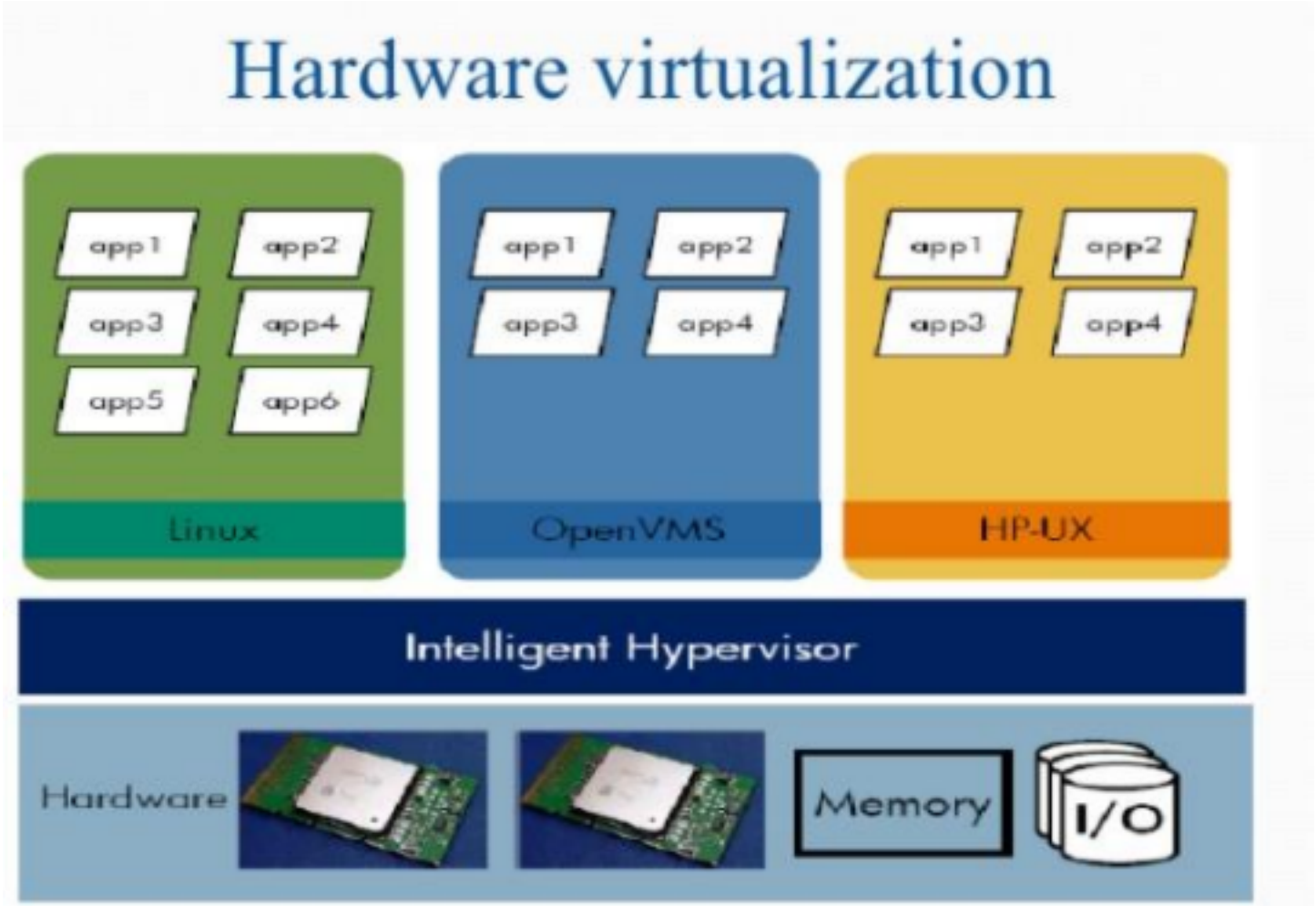
Hardware virtualization



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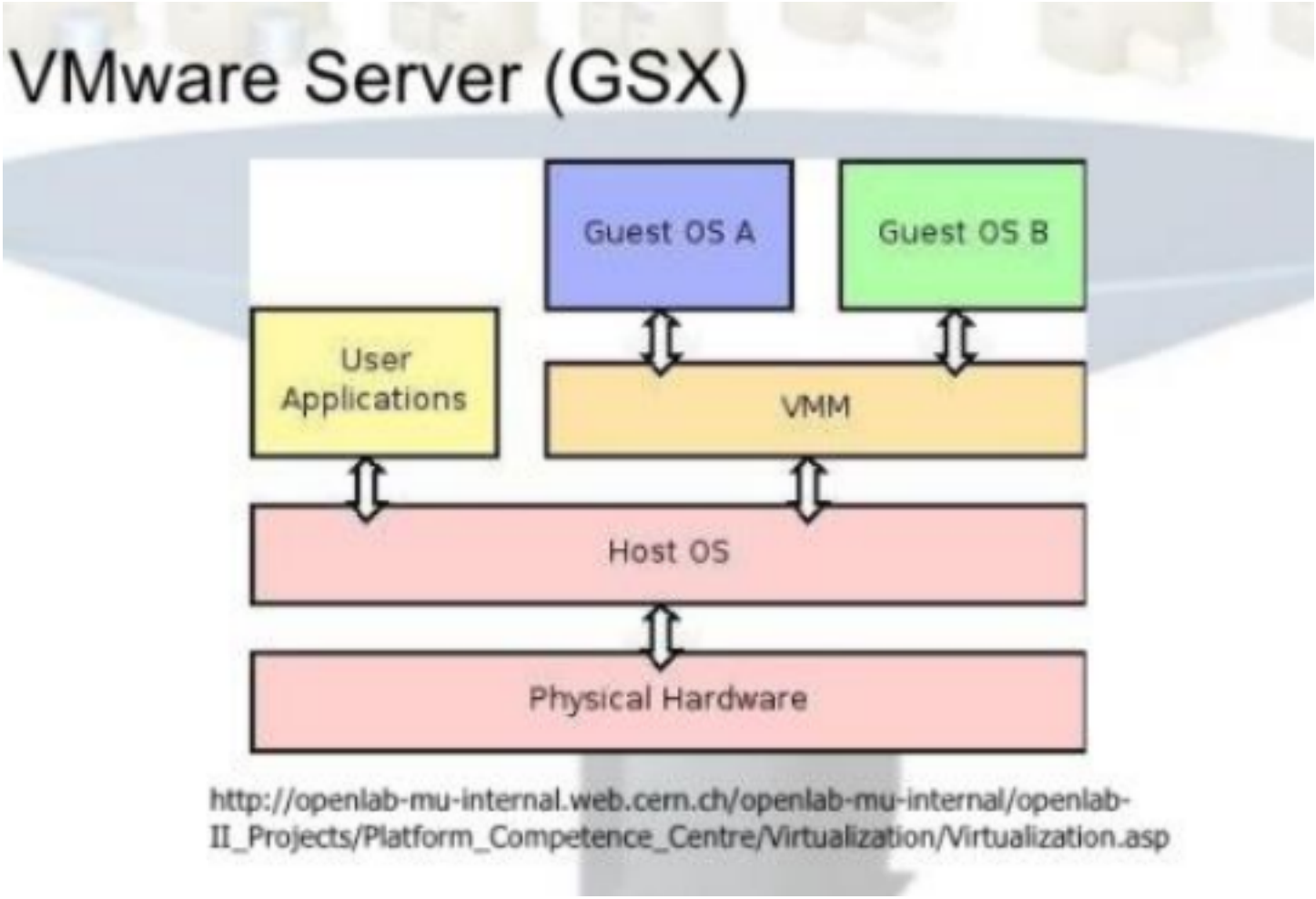
Software virtualization

- Single computer server to run one or more virtual environments.
- It is quite similar to virtualizations but here it abstracts the software installation procedure and creates a virtual software out of it.
- In software virtualizations, an application will be installed which will perform the further task.
- One software is physical while others are virtual as it allows

2 or more operating system using only one computer. • Types of Software Virtualization

  - Operating System Virtualization
  - Application Virtualization
  - Service Virtualization

Software virtualization



http://openlab-mu-internal.web.cern.ch/openlab-mu-internal/openlab-II_Projects/Platform_Competence_Centre/Virtualization/Virtualization.asp

Server virtualization

- Software directly installs on the server system and use for a single physical server can divide into many servers on the demand basis and balance the load.
- With the help of software, the server administrator divides one physical server into multiple servers.

Storage virtualization

- A grouping is done of physical storage which is from multiple network storage devices this is done so it looks like a single storage device. • Backup and recovery process.
- It is a sharing of the physical storage from multiple storage devices.

Virtualization Vs Cloud

- Cloud technology requires the concept of virtualization. Virtualization is a technology - it can also be treated as software that can manipulate hardware.
- At the same time, cloud computing is a service that is the result of Virtualization.
- Virtualization is the foundation element of cloud computing, whereas Cloud technology is the delivery

of shared resources as a service-on-demand via the internet.

- Cloud is essentially made-up of the concept of virtualization

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Advantage of Virtualization

- The number of servers gets reduced by the use of the virtualization concept
- Improve the ability of technology
- The business continuity was also raised due to

the use of virtualization.

- Increase efficiency for the development and test environment.
- Lowers Total Cost of Ownership

Features Virtualization

- **Partitioning**: Multiple virtual servers can run on a physical server at the same time.
- **Encapsulation of data**: All data on the virtual server is encapsulated in a file format.

- **Isolation**: The Virtual server running on the physical server is safely separated and don't affect each other.
- **Hardware Independence**: When the virtual server runs, it can migrate to a different hardware platform

References

- https://data-flair.training/blogs/virtualization-in-cloud computing/
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https://www.w3schools.in/cloud-computing/cloud-virtualization/ • https://www.slideshare.net/karimalinani/virtualization-4228802 • Virtualization in Cloud Computing, Intellipaat https://www.youtube.com/watch?v=_pPlanX5wQY&t=20s