


Lecture 5

Virtualization

Online vs offline classes

With and without virtualization in any organization

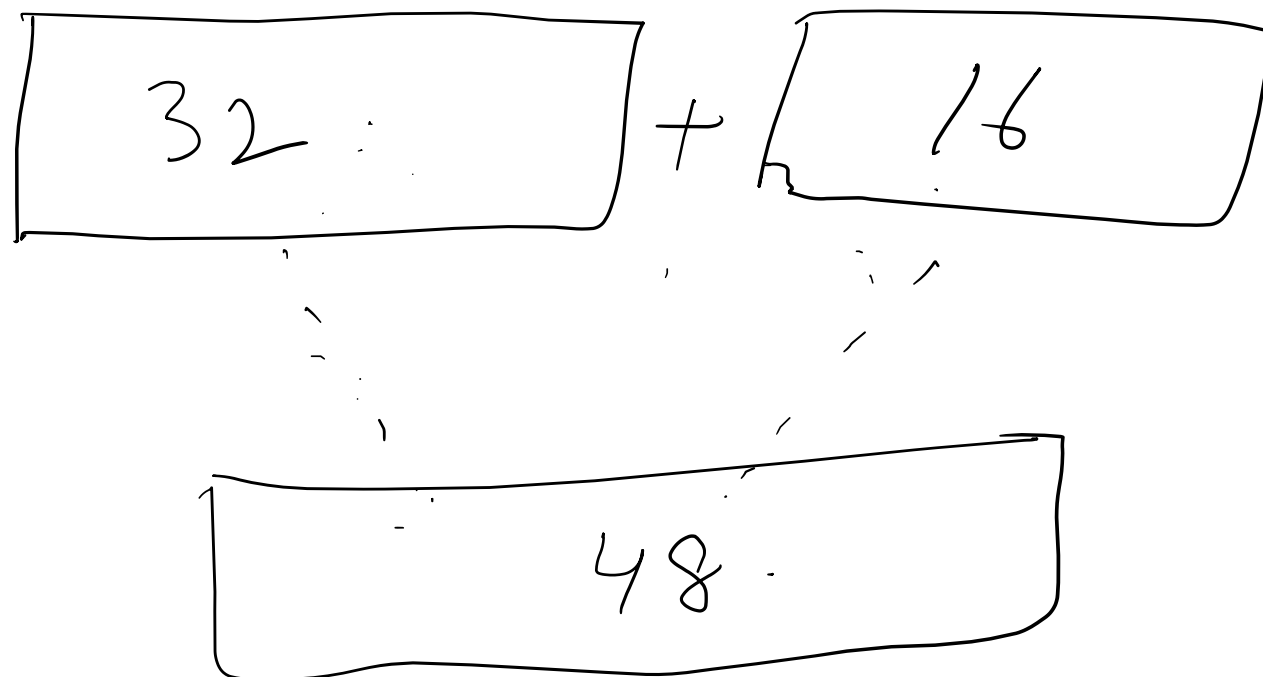
Let suppose mobile


internal memory card
32 GB 16 GB

High Quality 40 GB

Is it possible to download
this video?

as internal



7404B

✓ video
=

Max storage size is 50TB. Can be create 150TB?

Virtualization

In simple words, Virtualization is a technique of splitting/adding a physical resources into as many as logical resources as needed e.g. CPU, memory, etc.

Or

Virtualization is a technique or technology that transform hardware into software.

Examples:

- Virtual Classroom

- Video calling

- Virtualization of IT industry

- Virtualization of Mobile storage space

- Virtualization of a system

- Virtualization of storage space in a research center

Virtualization


Thus, Virtualization is a technique which allows us to share a single physical instance of a resource or an application among multiple customers and an organization. Virtualization often creates many virtual resources from one physical resource.

Need of virtualization

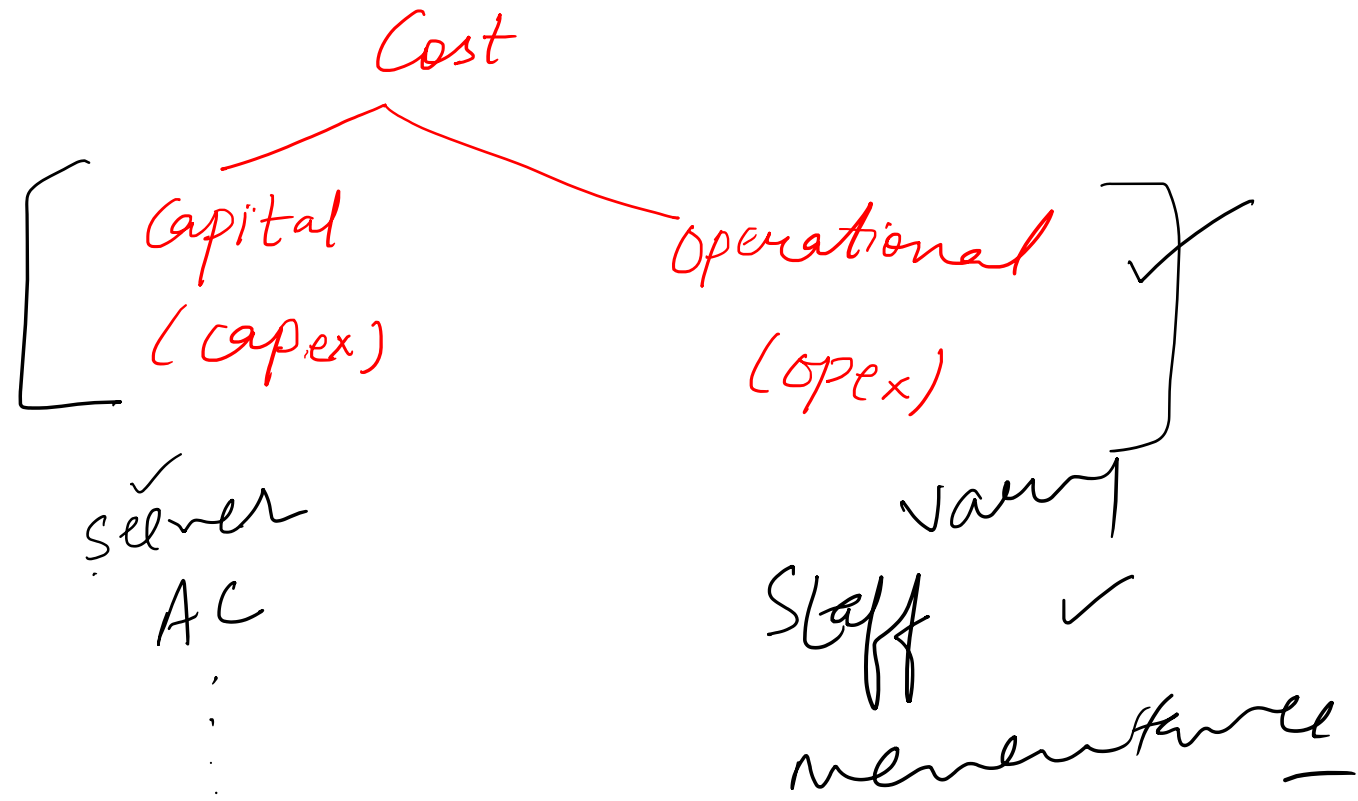
Case Study to show benefits of Virtualization

The expenses of clothing company- Before Virtualization

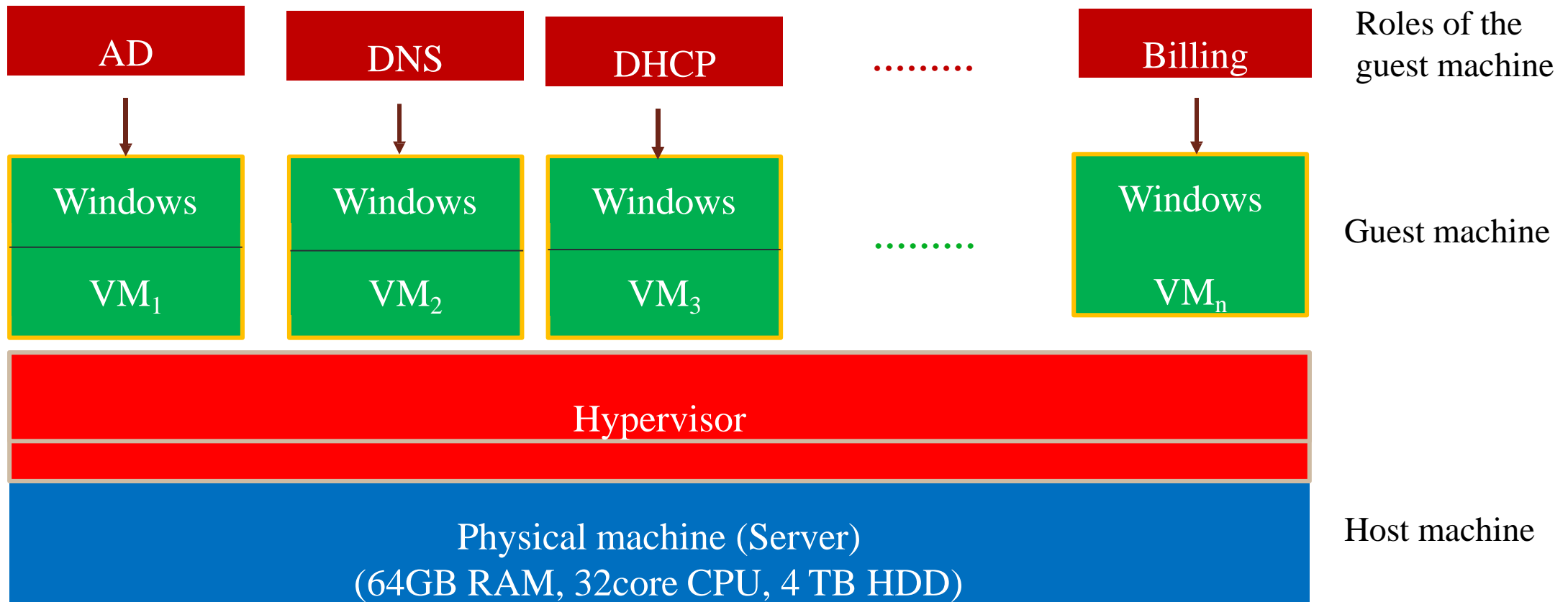
- 2500 sqft data center
- 100 physical server (30 for infra and 70 for App) (4 GB RAM, 2CPU, 128GB HDD)
- Cooling system
- 100 physical disk
- Cabling for 100 servers
- Staff Members
- Electricity and Power Backup
- Maintenance



Capex + Opex = 1 crore per year

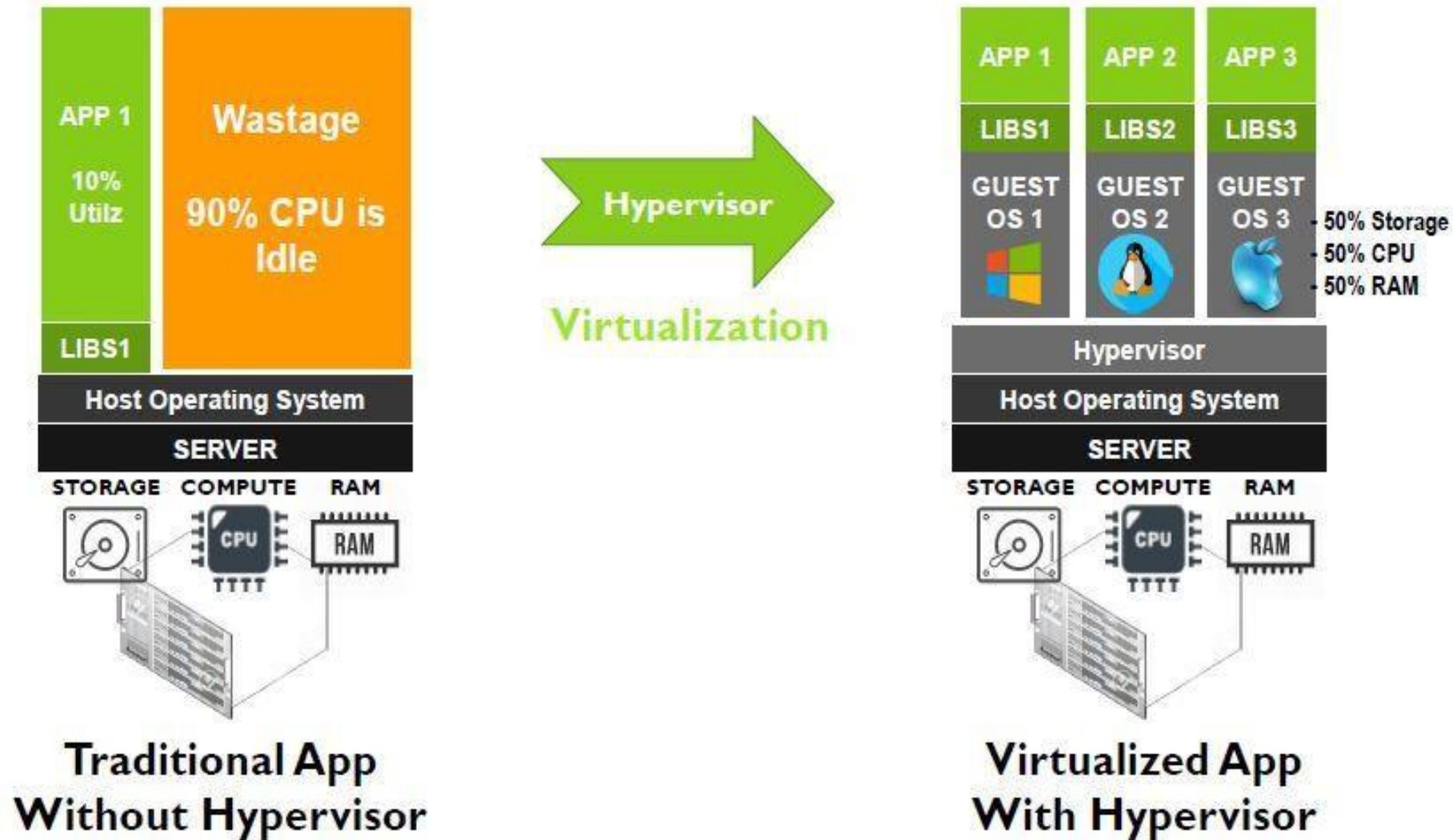


Virtualization



- **Hypervisor** is a software or firmware that creates and runs virtual machines.
- A hypervisor is also called as Virtual Machine Monitor.
- **Host Machine** - A machine on which a hypervisor is running one or more virtual machines.
- **Guest Machine** - Each virtual machine is guest machine.

Traditional v/s Virtualization Architecture



1. server — 10..vm deploys

2 server — 10 vm deploy

⋮

10 servers —

10 server ==

100 vm_s

without virtualization

100 servers

Large

space

cooling

Physical

staff.

electricity

With virtualization

10 servers

Sm Reduce

Reduce

Reduce

Reduce

Reduce

Thanks