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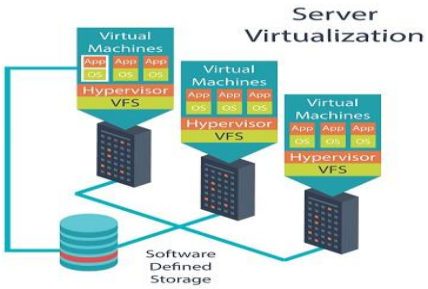
NEW TRENDS IN COMPUTING

VIRTUALIZATION:

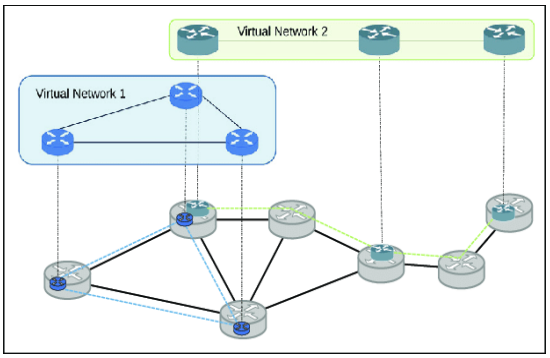
- Virtualization refers to simulation.
- Virtualization allows the pooling and sharing of the computational power (processor, server) and storage of multiple computers, network and other resources among multiple users
- Ex: Division of hard disk into different partitions.
- Virtualization is the ability to create a virtual copy
- It divides the multiple resources into different execution environments.
- Virtualization can be achieved at different levels.
- A large data storage system where complete data of an organization can be kept with complete security.
- A high end server that can retrieve the data from the storage and process it with fast speed.
- Fast and reliable internet connectivity.

SERVER VIRTUALIZATION:



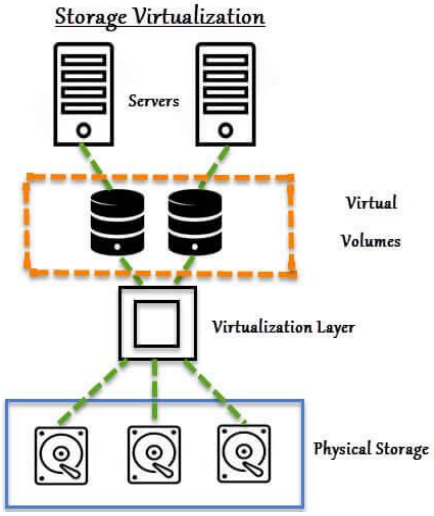
NETWORK VIRTUALIZATION:

- The bandwidth available in the network environment is much more than is needed for a single user.
- Thus, for complete utilization of this bandwidth, it is required to partition the available bandwidth into channels.
- Each of which is independent from the other and each of which can be assigned to a particular server or device in real time.



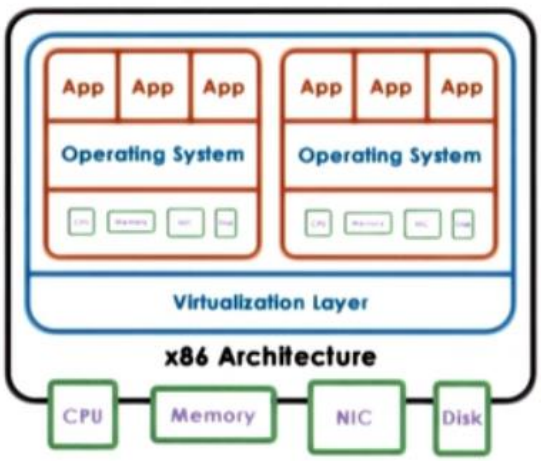
STORAGE VIRTUALIZATION:

- Storage virtualization allows separate storage devices to be combined into a perceived single unit.
- Storage virtualization attempts to maximize the efficiency of storage devices



UNIVERSAL VIRTUALIZATION:

- A system that provides both virtualizations of hardware as well as software is referred to as Universal Virtualization.



ADVANTAGES OF VIRTUALIZATION:

- Improved hardware utilization
- Lesser hardware cost.
- Increased operational agility and reduced downtime.
- Lower total cost of ownership.
- It improves overall efficiency and effectiveness of the system.
- Increased network capacity: channelizing the network increases the transmission capacity.

DISADVANTAGES OF VIRTUALIZATION:

- It can have a high cost of implementation.
- It creates a security risk.
- It creates an availability issue.
- It creates a scalability issue.
- It requires several links in a chain that must work together cohesively.
- It takes time.

CLOUD COMPUTING:

- Cloud computing is a technology that uses the internet for storing and managing data on remote servers and then access data via the internet.

- The cloud computing model allows access to information and computer resources from anywhere where a network connection is available.
- Cloud computing provides a shared pool of resources, including data storage space, networks, computer processing

power, and specialized corporate and user applications.

FEATURES OF CLOUD COMPUTING:

- On-demand self service
- Broad network access
- Resource pooling
- Rapid elasticity
- Measured service

Cloud Software as a Service (SaaS):

- This service provides user a capability to use any applications by executing it on a cloud infrastructure.
- Ex: Gmail, Hotmail, Microsoft Office

Cloud Platform as a Service (PaaS):

- This service provides user a capability to deploy user-created or acquired applications onto the cloud infrastructure.
- Cloud service provider provides an operating system, hardware, and network.
- Ex: Google platform (Search engine)

Cloud Infrastructure as a Service (IaaS):

- This service provides user a provision processing, storage, networks, and other fundamental computing resources.
- Ex: Data Centres

Cloud computing Deployment Models:

There are four different ways through which a cloud computing can be deployed.

- Private Cloud
- Community Cloud
- Public Cloud
- Hybrid Cloud

ADVANTAGES OF CLOUD COMPUTING:

- It creates flexible environment.
- An organization can scale up or down its IT usage, according to demand.
- No need to procure space for creating infrastructure
- It provides mobile solution

STRETCH YOURSELF

1. Briefly explain virtualization?
2. What are the different types of virtualization?
3. Explain about cloud computing.
4. What are the different services provided by cloud computing?