Types of visualization

Server Virtualization:

- **Definition**: Partitioning a physical server into multiple virtual servers, each running its own operating system and applications.
- **Example**: Amazon EC2 (Elastic Compute Cloud) allows users to deploy virtual servers (EC2 instances) on-demand in the AWS cloud. These instances can be scaled up or down based on computing requirements without needing physical hardware.

Network Virtualization:

- **Definition**: Abstracting the physical network infrastructure to create multiple virtual networks that operate independently.
- **Example**: VMware NSX provides network virtualization and security features in the cloud. It enables organizations to create virtual networks, manage security policies, and automate network provisioning across hybrid cloud environments.

Storage Virtualization:

- **Definition**: Aggregating physical storage resources into a single virtual storage pool that can be managed centrally.
- **Example**: AWS S3 (Simple Storage Service) offers scalable object storage in the cloud. It virtualizes physical storage infrastructure to provide highly durable and available storage solutions accessible via APIs.

Desktop Virtualization (VDI):

- **Definition**: Hosting desktop environments on a server and delivering them remotely to end-user devices.
- **Example**: Microsoft Azure Virtual Desktop (formerly Windows Virtual Desktop) allows organizations to deploy and manage virtual desktops in the Azure cloud. Users can access their desktop environments securely from any device with an internet connection.

Application Virtualization:

- **Definition**: Isolating applications from the underlying operating system and delivering them over the network.
- **Example**: Docker containers enable developers to package applications and dependencies into lightweight, portable containers. These containers can run consistently across different computing environments, facilitating cloud-native application development and deployment.

Hardware Virtualization:

- **Definition**: Creating virtual instances of computer hardware (e.g., CPU, memory) to run multiple operating systems or applications simultaneously.
- **Example**: VirtualBox and VMware Workstation are examples of desktop virtualization software that use hardware virtualization capabilities to create and manage virtual machines (VMs) on a single physical computer. This allows users to run multiple operating systems concurrently for testing or development purposes.