Virtualization, Provisioning, and Configuration

1. Virtualization

Definition:

Virtualization is the process of creating virtual (rather than physical) versions of computing resources such as servers, storage devices, or operating systems.

Examples:

- Running multiple virtual machines (VMs) on a single physical server using a hypervisor like VMware, KVM, or VirtualBox.

- Creating a virtual network interface or virtual storage volume.

Purpose:

- Better resource utilization

- Easier scalability and testing

- Isolation between environments

2. Provisioning

Definition:

Provisioning is the process of preparing and equipping a system or environment with the resources it needs to function.

Types:

- Server provisioning – Deploying a server with OS, memory, CPU, etc.

- User provisioning – Creating user accounts with access rights.

- Cloud provisioning – Automatically allocating resources in the cloud (e.g., AWS EC2 instance).

Purpose:

- Quickly set up environments

- Automate infrastructure deployment

3. Configuration

Definition:

Configuration is the act of setting up software or systems so they behave as required by specifying parameters, settings, or properties.

Examples:

- Editing files like /etc/httpd/conf/httpd.conf for Apache server

- Using tools like Ansible, Puppet, or Chef for automated configuration

Purpose:

- Ensure systems meet specific behavior or policies

- Maintain consistency across environments

Diagram: Workflo

Quick Summary Table:

Term	**What it does**	**Key Tools**
Virtualization	Creates virtual resources	VMware, KVM, VirtualBox
Provisioning	Allocates/sets up resources	Cloud-init, Terraform
Configuration	Sets parame ters for desired behavior	Ansible, Puppet, Chef