Hypervisor & Its Types

What is a Hypervisor?

A hypervisor is specialized software that enables a single physical computer (host machine) to run multiple independent virtual computers (virtual machines or VMs). It abstracts the hardware of the host system and allocates computing resources (CPU, memory, storage) to each VM as needed.

Hypervisors are essential to virtualization, which is heavily used in DevOps, cloud computing, and modern IT infrastructures.

Type 1: Bare-Metal Hypervisor

A Type 1 hypervisor, also known as a bare-metal hypervisor, is installed directly on the host machine's hardware. It doesn't require an underlying operating system to function. Because of this, it has direct access to hardware resources, making it extremely fast and efficient.

Type 1 hypervisors are often used in large-scale, production environments like data centers and enterprise-level servers where performance, stability, and scalability are crucial.

Examples: VMware ESXi, Microsoft Hyper-V (in server mode), Citrix XenServer.

Type 2: Hosted Hypervisor

A Type 2 hypervisor, or hosted hypervisor, runs on top of an existing operating system (like Windows, macOS, or Linux). It acts more like a regular application, using the host OS to interact with hardware.

This type is user-friendly and great for learning, development, and testing purposes. However, it

might be less performant than Type 1 since it's layered over an existing OS.

Examples: Oracle VirtualBox, VMware Workstation, Parallels Desktop.