

Hypervisor



Introduction

- Virtualization means creating more logical IT resources, called virtual systems, within one physical system.
- Hypervisor is what controls and allocates what portion of hardware resources each operating system should get.
- Manages what every one of them to get what they need and not to disrupt each other.

Types Of Hypervisor

- **Type 1 (native) Hypervisor:** Hypervisors run directly on the system hardware – A “bare metal” embedded hypervisor.

The diagram illustrates the architecture of a Type 1 (native) hypervisor. It consists of two stacked rectangular boxes. The top box is light blue with a black border and contains the word "Hypervisor" in a large, bold, black serif font. The bottom box is light gray with a black border and contains the word "Hardware" in a large, bold, black serif font. This visualizes the hypervisor running directly on the hardware.

Hypervisor

Hardware

Type 1 Hypervisor

- **VMware ESX and ESXi** : Offer advanced features and scalability, but require licensing, so the costs are higher.
- **Microsoft Hyper-V** : Doesn't offer many of the advanced features. available in both a free edition, 4 commercial editions
- **Citrix XenServer** : Just as Red Hat Enterprise Virtualization uses KVM (Kernel Based VM), Citrix uses Xen in the commercial XenServer.
- **Oracle VM** : The Oracle hypervisor is based on the open source Xen. However, if you need hypervisor support and product updates, it will cost you.

Types Of Hypervisor

- **Type 2 (hosted) Hypervisor:** Hypervisors run on a host operating system that provides virtualization services, such as I/O device support and memory management.

Hypervisor

Host OS

Hardware

Type 2 Hypervisor

- **VMware Workstation/Fusion/Player :** It is free & some advanced features, such as record-and-replay and VM snapshot support.
- **Microsoft Virtual PC :** Runs only on Windows 7 and supports only Windows operating systems running on it.
- **Oracle VM VirtualBox :** Despite being a free, hosted product with a very small footprint, VirtualBox shares many features with VMware vSphere and Microsoft Hyper-V.
- **Red Hat Enterprise Virtualization :** Has qualities of both a hosted and a bare-metal virtualization hypervisor. It can turn the Linux kernel itself into a hypervisor so the VMs have direct access to the physical hardware.

Thank You