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EXPERIMENT NO 3

Aim : To Study Bare-Metal Virtualization using Xen.

Definition : A hypervisor, also known as a virtual machine monitor (VMM), is a virtualization software layer that separates the software and hardware of a host computer to construct and run virtual machines (VMs). Using a hypervisor, multiple virtual machines (VMs) can run concurrently while sharing the physical computing resources of the same computer (host machine).

A bare metal or Type 1 hypervisor is one of the two primary types of hypervisors.

Diagram :

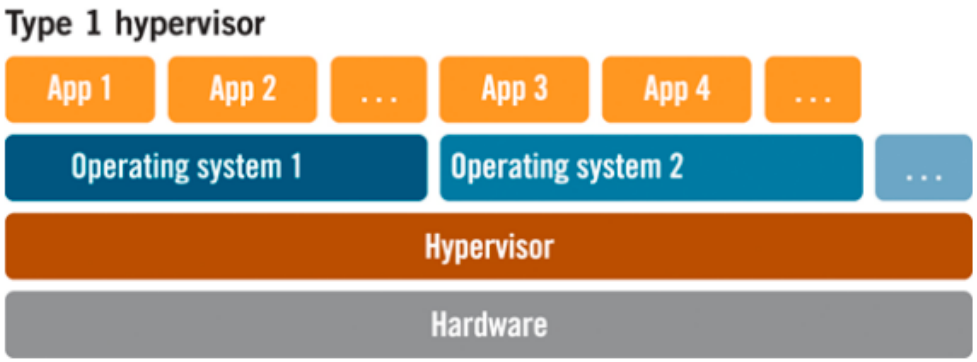
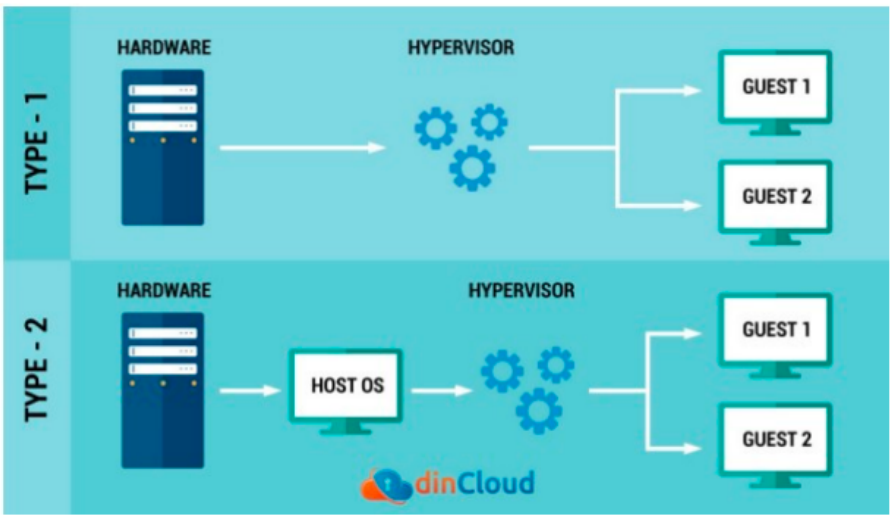


Figure 2. A Type 1 or bare-metal hypervisor sits directly on the host hardware.



Advantages :

1) Allowing organizations to create and run virtual machines in real time.

2) Rather than hosting distinct operating systems on multiple servers, providing a cost-effective and energy-efficient approach to run many VMs.

3) Ensure that operating systems and their applications can run on a variety of hardware platforms, rather than relying on OS-specific devices or drivers.

4) Direct interaction with the resources of a host machine, such as the CPU, RAM, and physical storage space.

5) Allocating hardware resources and computing power from a host computer to multiple VMs at the same time while keeping them isolated.

6) By eliminating the requirement to transmit via a separate OS layer, latency is reduced.

7) Because there is nothing between the bare metal hypervisor and the host computer's hardware to hack, it provides more robust security.

Conclusion :

Type 1 hypervisor (also called a bare metal hypervisor) is installed directly on physical host server hardware just like an operating system. Type 1 hypervisors run on dedicated hardware. They require a management console and are used in data centers. Examples include Oracle OVM for SPARC, ESXi, Hyper-V and KVM.