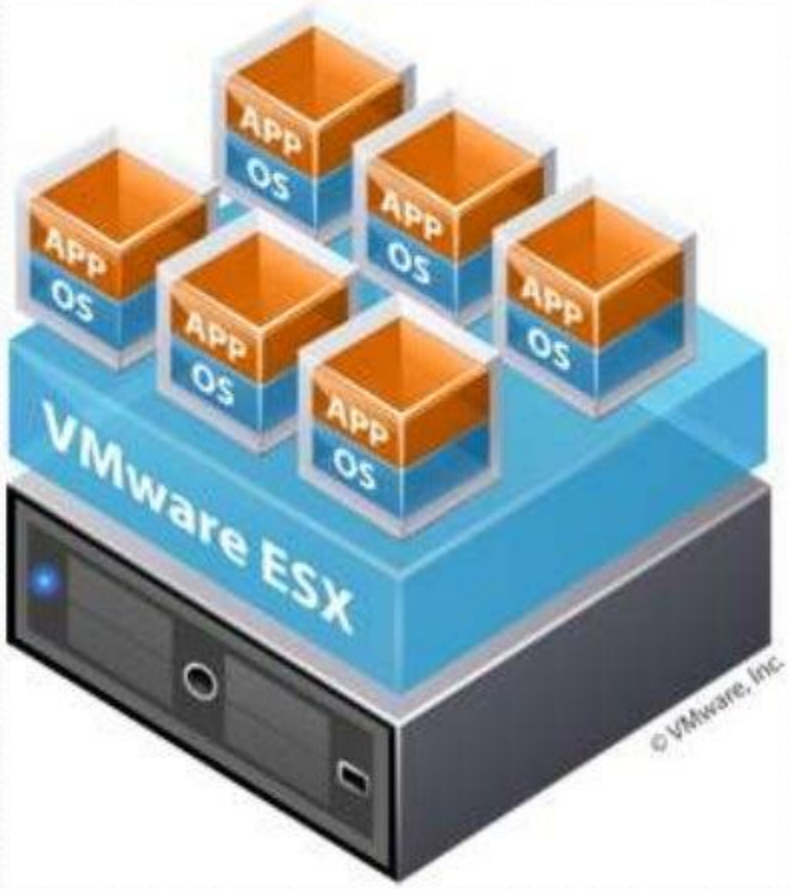
Virtualization

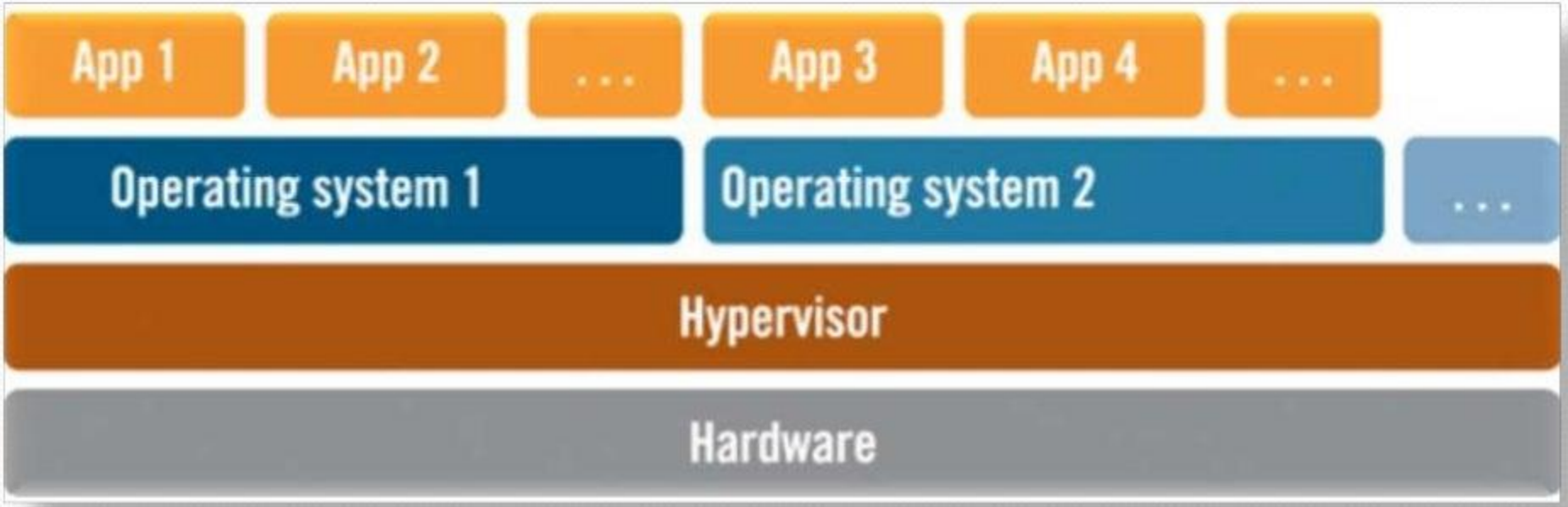
What Is Virtualization ?

- Virtualization is a Technology that transforms hardware into software.
- Virtualization allows to run multiple operating systems as virtual machines.
  - Each copy of an operating system is installed in to a virtual machine.

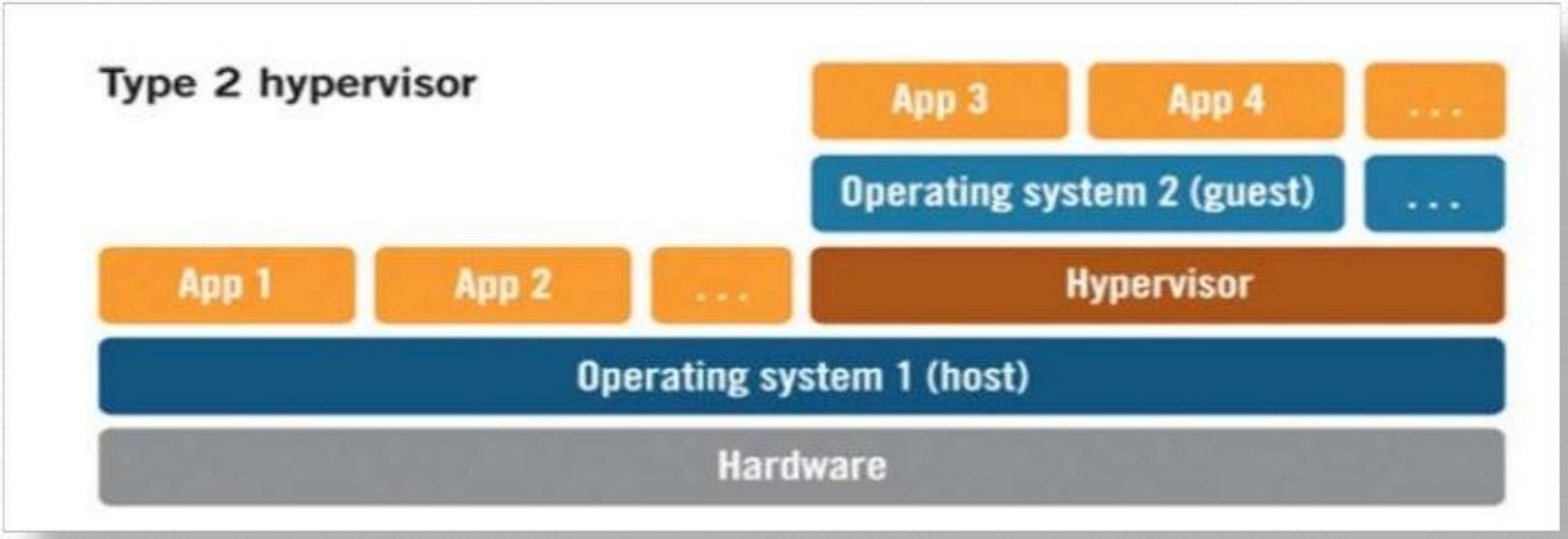


How Does Virtualization Work ?

- A Virtualization layer is installed.
  - Uses Bare-metal or Hosted Hypervisor architecture.
- A bare-metal hypervisor system does not require operating system.
- Hypervisor is operating system.

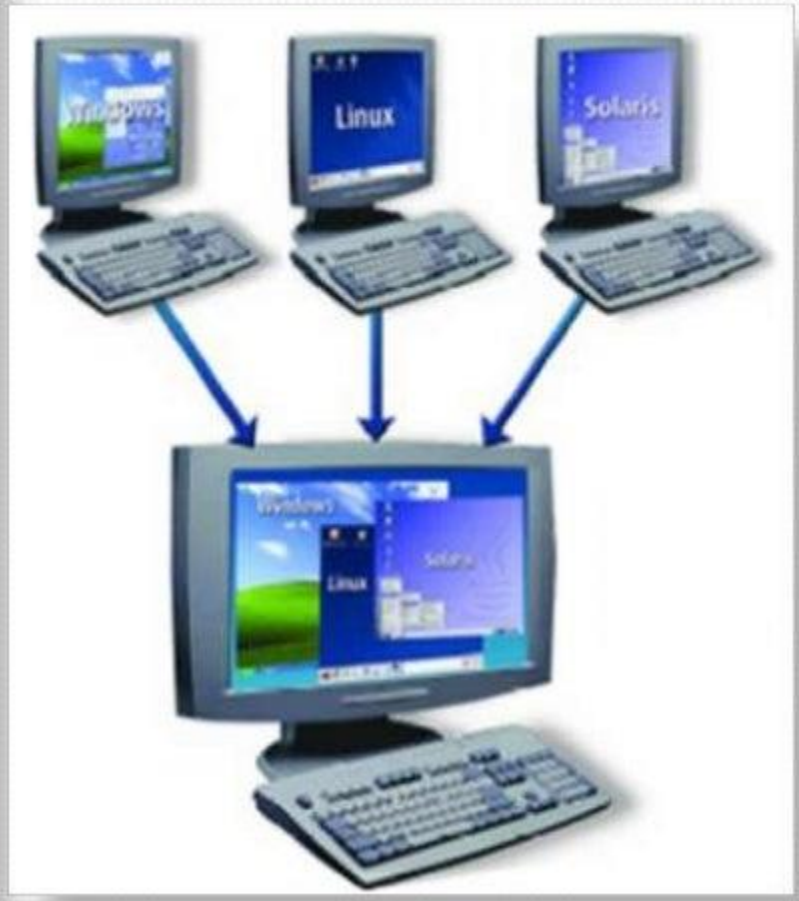


- Host based Virtualization requires operating system(windows or linux) installed on the computer.
- Virtualization layer installed as application on operating system.
  - VMWare Server is free application supported by windows or linux.



What Is A Virtual Machine ?

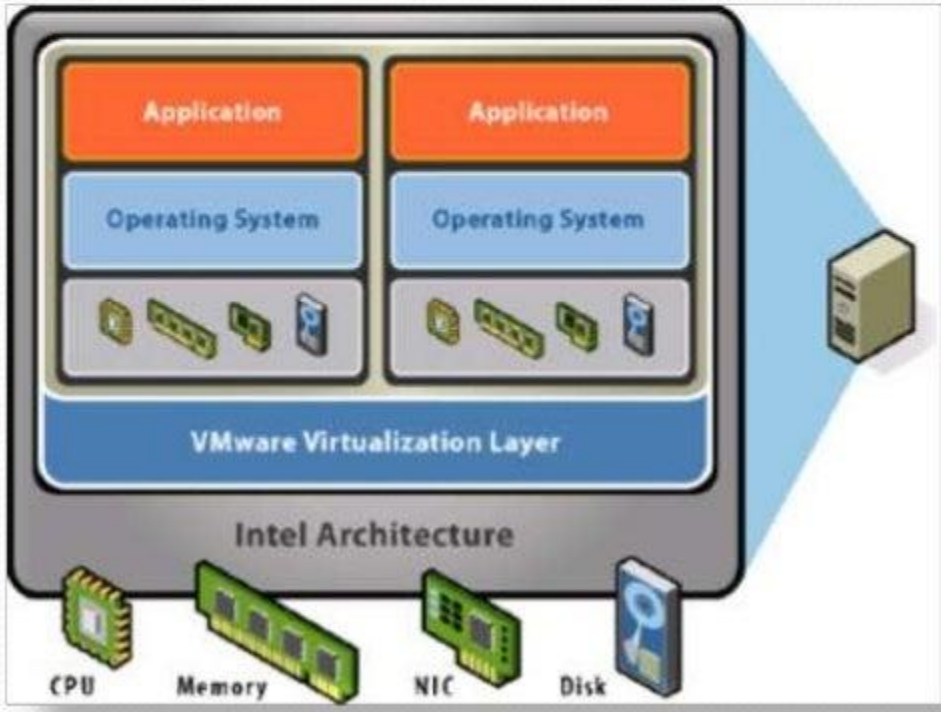
- Isolated guest operating system installation within a normal host operating system.
- From the user perspective, virtual machine is software platform like physical computer that runs operating systems and apps.
- Virtual machines posses hardware virtually.



Types of Virtualization

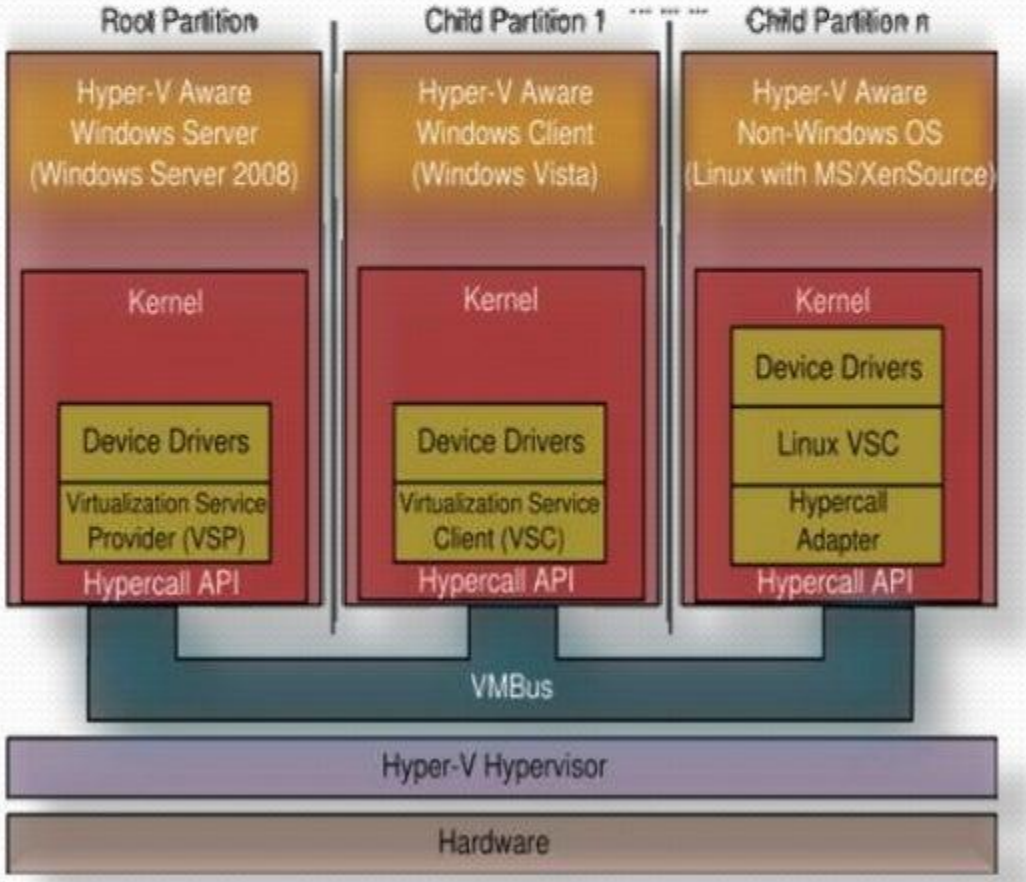
Full Virtualization

Full virtualization uses a special kind of software called a **hypervisor**. The hypervisor interacts directly with the physical server's CPU and disk space. It serves as a **platform** for the virtual servers' operating systems.



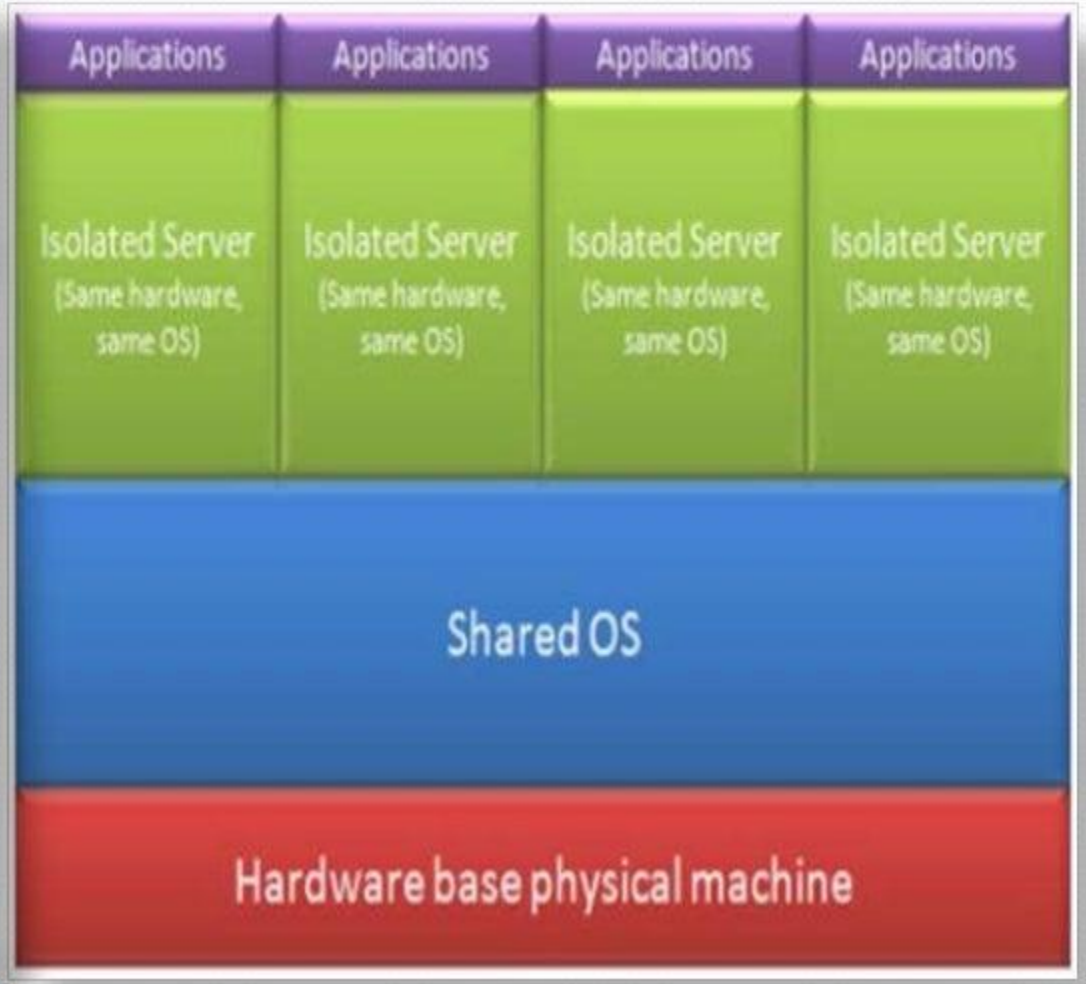
Para Virtualization

The para-virtualization approach is a little different than the full virtualization technique, the guest servers in a para-virtualization system are aware of one another.

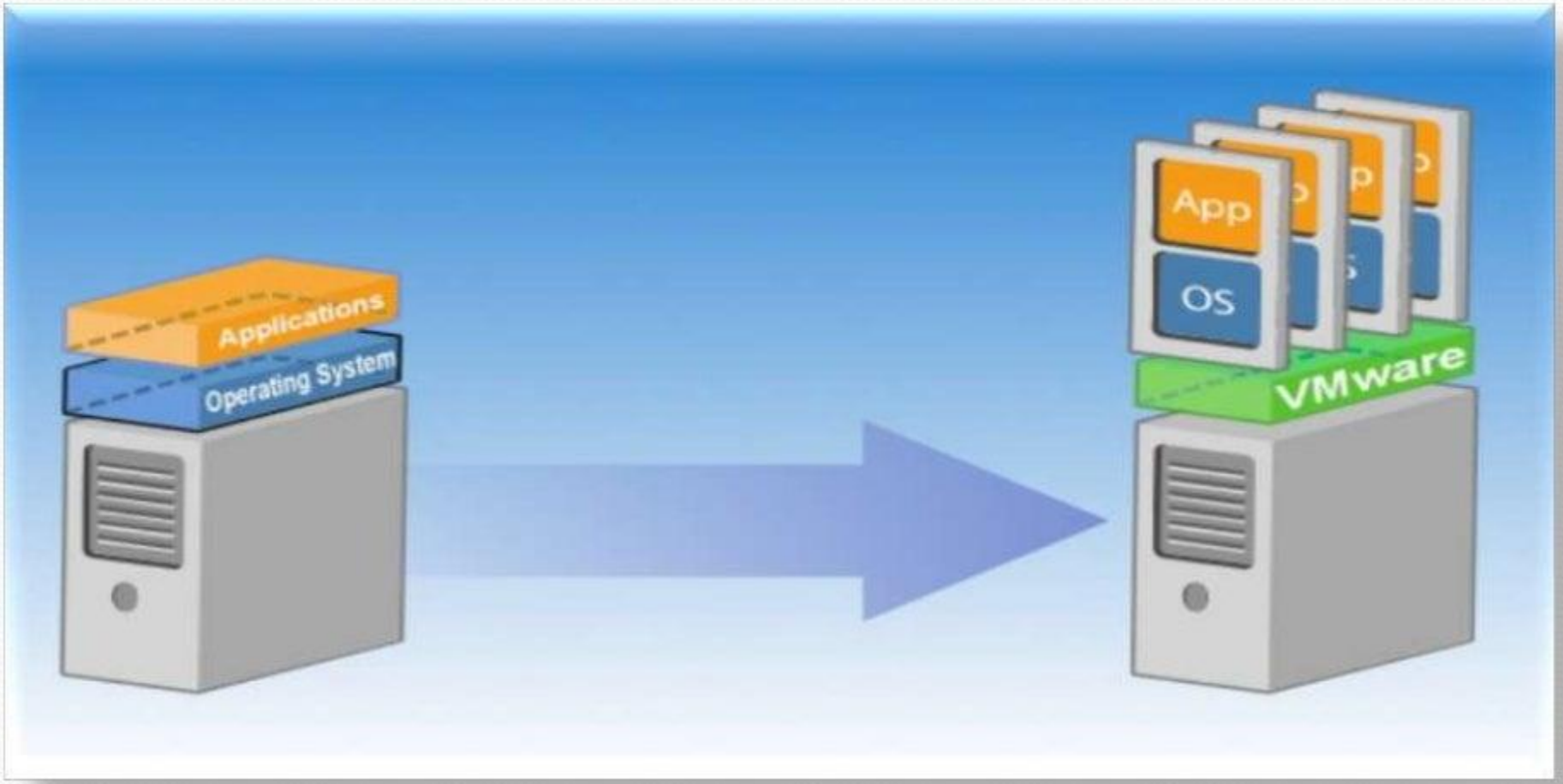


OS Level Virtualization

An OS-level virtualization approach doesn't use a hypervisor at all. Instead, the virtualization capability is part of the host OS, which performs all the functions of a fully virtualized hypervisor

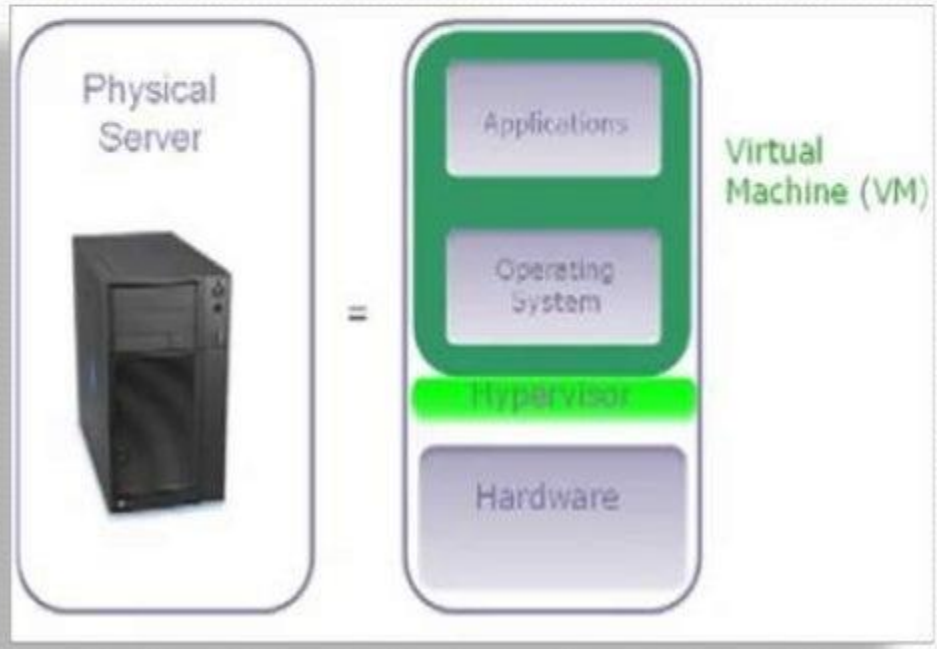


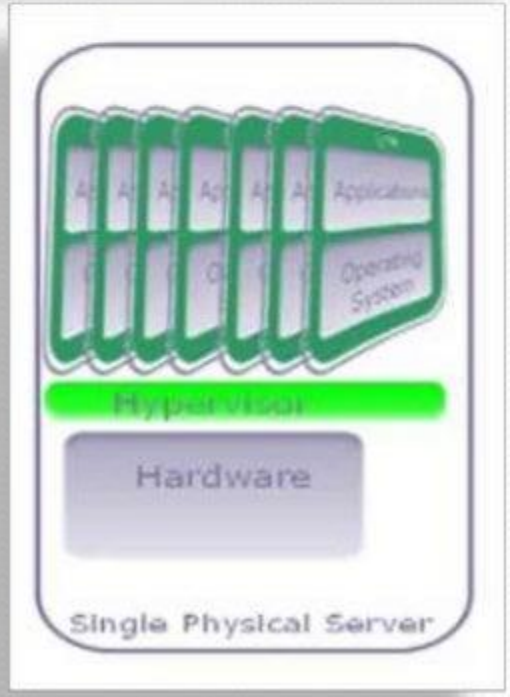
Virtualization Allows Transformation of a Server for Multiple Applications



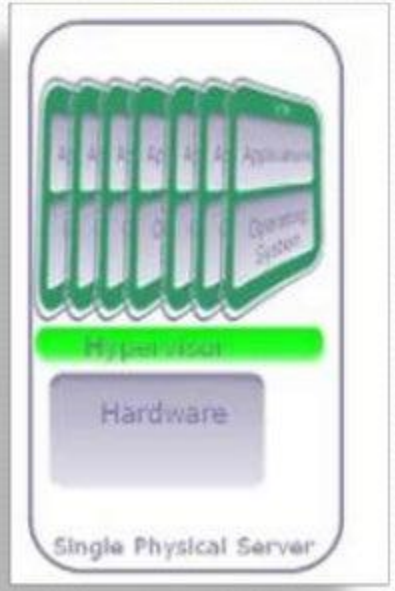
Server virtualization

- Creating multiple logical server OS instances on one physical piece of hardware
- Hypervisor is installed on one physical server
- Multiple instances of server OS are installed.



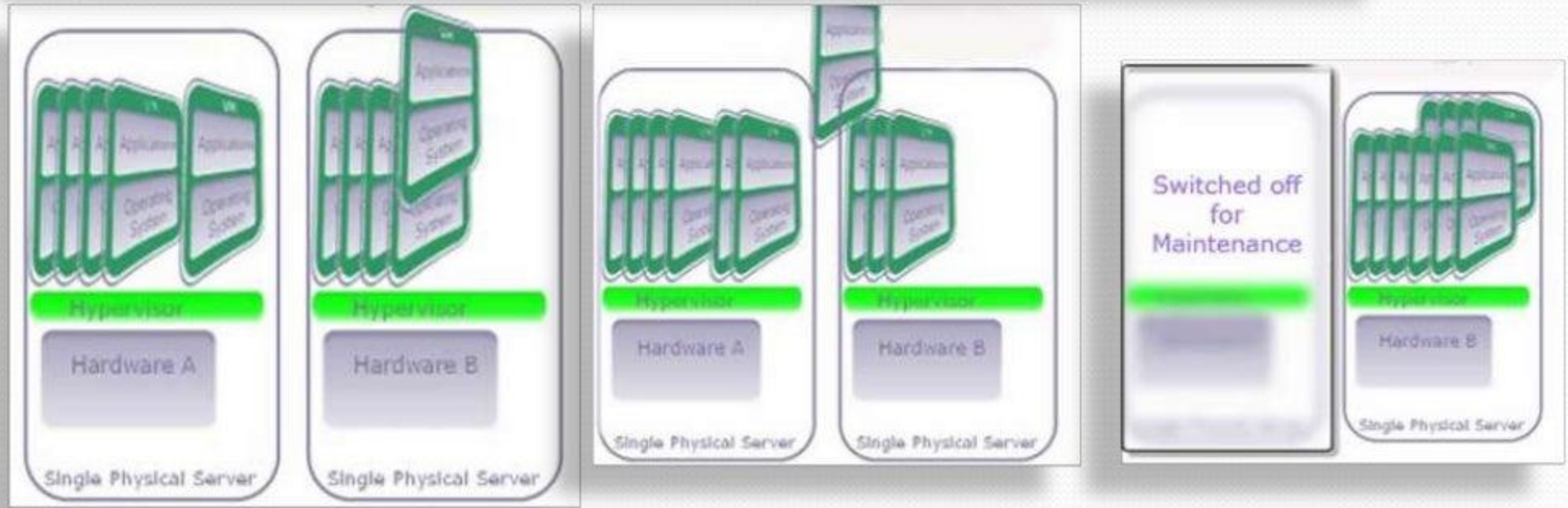


Server Virtualization



Server Virtualization

- The VMs created on one physical server can be run another physical server.
- Failure in one physical server will not effect the VMs installed on that.



Desktop Virtualization

- Virtual Desktop Infrastructure (VDI) is a desktop delivery model which allows client desktop workloads (operating system, application, user data) to be hosted and executed on servers in the data center
- Users can communicate with their virtual desktops through a client device that supports remote desktop protocols such as RDP
- This allows you to virtualize Windows desktops in the datacenter and deliver them on demand to any user — anywhere

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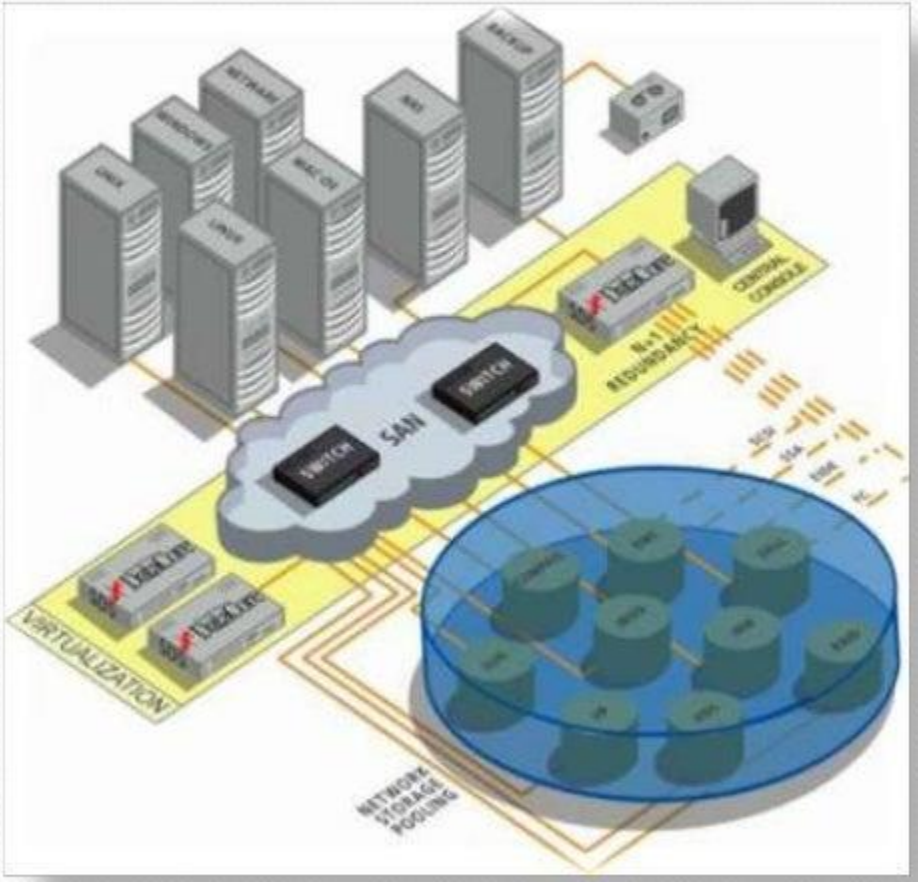
Desktop Virtualization

Storage Virtualization

Storage Virtualization *is the next frontier in Storage Advances that* ***aims to provide a layer of*** *abstraction to reduce complexity*

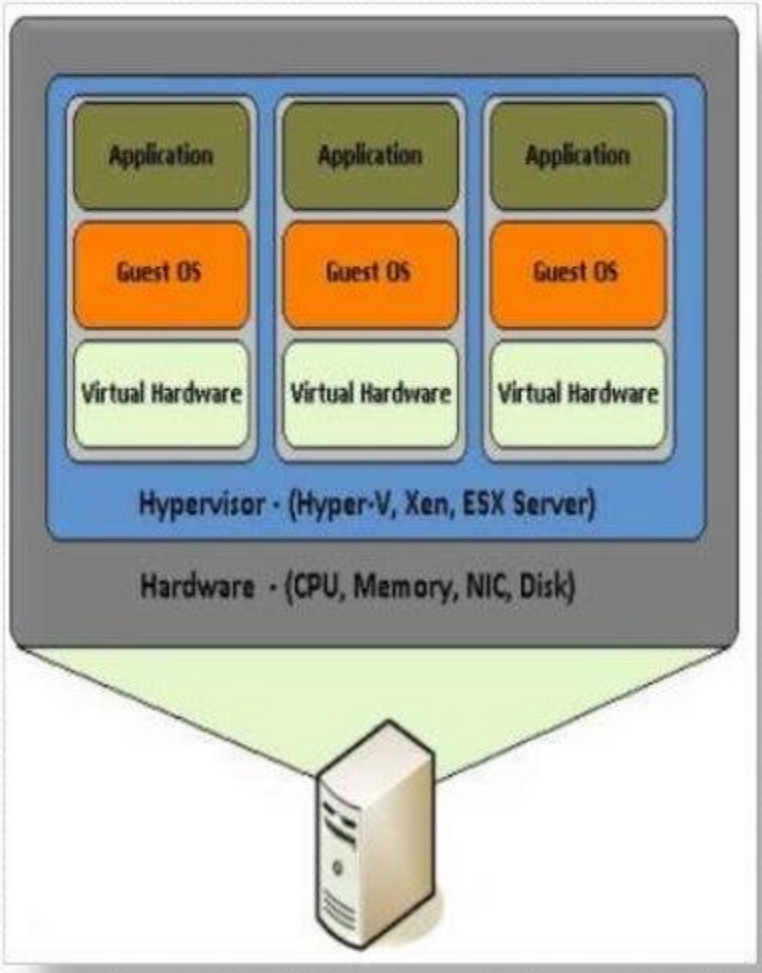


Software Virtualization

Software virtualization is the virtualization of applications or computer programs

Hardware Virtualization

- Computer hardware virtualization is the virtualization of computers or operating systems.
- It hides the physical characteristics of a computing platform from users, instead showing another abstract computing platform



Conclusion

Abstraction of computer resources, include reduced operating and capital costs, improved utilization of computing resources and greater IT staff productivity

Supportability of Multiple Company products running as Guest Programs on a non-certified virtualization engine.

Managing load on virtualized systems can be more art than science.


GridGain 2.0
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VirtualBox
virtualLogix
CITRIX
vmware
force.com
platform as a service
OpenVZ
10gen
KVM
Microsoft
parascale
Powering Cloud Storage
hp
Xen
GIGASPACES
Parallels
Optimized Computing
RIGHTSCALE
enomaly
elastra
ORACLE
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PowerVM
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THANK YOU