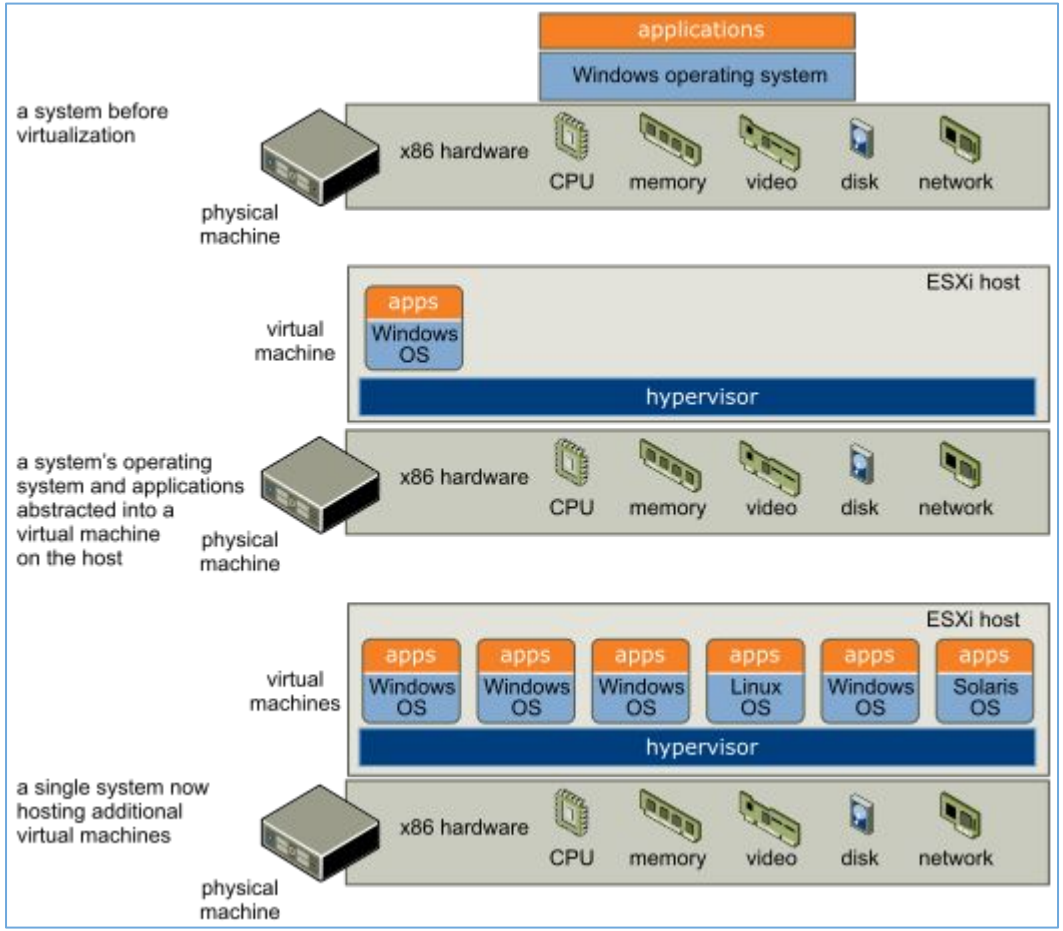
# Till Now we understand ..

Due to the limitations of x86 servers, many IT organizations must deploy multiple servers, each operating at a fraction of their capacity, to keep pace with today's high storage and processing demands. The result: huge inefficiencies and excessive operating costs.

**Enter virtualization**. Virtualization relies on software to simulate hardware functionality and create a virtual computer system. This enables IT organizations to run more than one virtual system – and multiple operating systems and applications – on a single server. The resulting benefits include economies of scale and greater efficiency.


applications
Windows operating system
a system before virtualization
x86 hardware
CPU
memory
video
disk
network
physical machine
ESXi host
apps
Windows OS
virtual machine
hypervisor
a system's operating system and applications abstracted into a virtual machine on the host
x86 hardware
CPU
memory
video
disk
network
physical machine
ESXi host
apps
Windows OS
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Windows OS
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Linux OS
apps
Windows OS
apps
Solaris OS
virtual machines
hypervisor
a single system now hosting additional virtual machines
x86 hardware
CPU
memory
video
disk
network
physical machine

# Can anyone tell me Difference between Cloud Computing & Virtualization ??

**Virtualization** is software that makes computing environments independent of physical infrastructure, {Conversion of physical resources into logical resources}

while **cloud computing** is a service that delivers shared computing resources (software and/or data) on demand via the Internet. As complementary solutions, organizations can begin by virtualizing their servers and then moving to cloud computing for even greater agility and self-service.

# Types Of Virtualization

## Server Virtualization

Server virtualization enables multiple operating systems to run on a single physical server as highly efficient virtual machines. Key benefits include:

- Greater IT efficiencies
- Reduced operating costs
- Faster workload deployment
- Increased application performance
- Higher server availability
- Eliminated server sprawl -(Unutilized resources) and complexity

# Network Virtualization

By completely reproducing a physical network, network virtualization allows applications to run on a virtual network as if they were running on a physical network — but with greater operational benefits and all the hardware independencies of virtualization.

(Network virtualization presents logical networking devices and services — logical ports, switches, routers, firewalls, load balancers, VPNs and more — to connected workloads.)

## Desktop Virtualization

Deploying desktops as a managed service enables IT organizations to respond faster to changing workplace needs and emerging opportunities. Virtualized desktops and applications can also be quickly and easily delivered to branch offices, outsourced and offshore employees, and mobile workers using iPad and Android tablets.

# Storage virtualization

ESXi provides host-level **storage virtualization**, which logically abstracts the physical **storage** layer from virtual machines. An ESXi virtual machine uses a virtual disk to store its operating system, program files, and other data associated with its activities.

and much more ...

# Tools reference : VMware Vsphere

# Virtualization Tools:

# VMware Vsphere - ESxi - 4  GB * 4
# Vsphere Web Client [ For Managing One Esxi Host ] - Web browser

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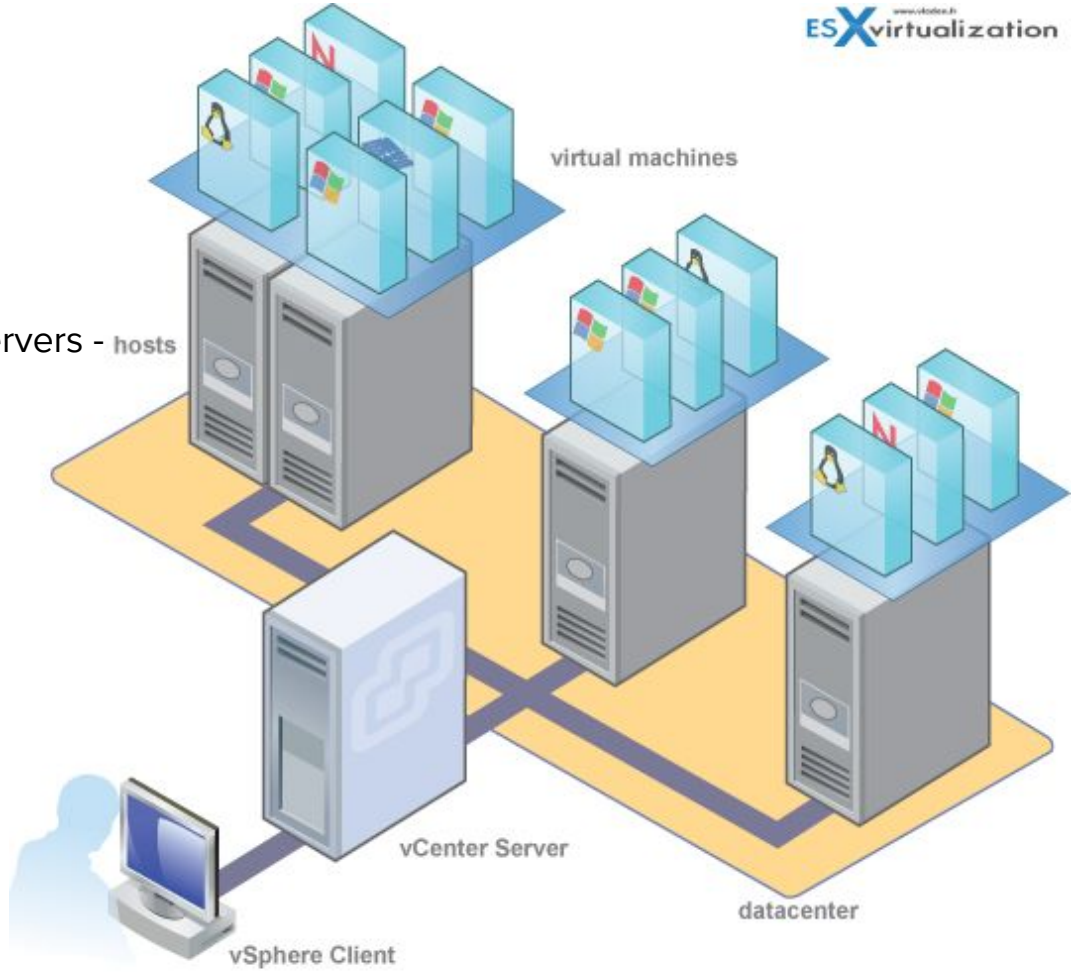
??Vsphere VCenter [ For Managing more than one Esxi Hosts ]

Esxi servers - hosts



# Now .. It’s time for virtual tour ..for Overview and Demonstration of Datacenter Virtualization - {Server, Network, Storage ...}

Source Link VMware: https://my.vmware.com/web/vmware/evalcenter?p=virtualization-hol-20