Need of Virtualisation

In recent years, we have been hearing a lot about virtualisation. Most of us have used virtualisation on our personal computers but we actually are unaware of its benefits for commercial use. Every now and then the question that comes to mind is whether there is "need of virtualisation"?

Well, the answer is yes. Let's take the real-world example. The servers which are running all the time actually take only about (1-10) ms to service each request. De facto it should be much faster. So why do we need to keep server up all the time. It costs tremendous amount of energy per server and also increases the maintenance cost. We can save this by implementing he concept of virtualisation.

Virtualisation is nothing but blend hardware and software engineering which as a result produces virtual machines(VMs). This creates high level of abstraction allowing multiple instances to run on single physical hardware. The leverage here is, attenuation in energy wastage and maintenance cost per server. Also, we don’t need to keep server-up all the time. It is the core technology used in could computing.

Evolution of Virtualisation

Just like computers Virtualisation was first associated with mainframes but now it is being used everywhere — personal computers, datacenter etc. because of its efficient resource utilization — software and hardware.

During early years, every server was capable of handling single workload and for every new project required setting up new server. Also, the CPU utilization was nearly equal to 15%. Over the past decade there has been accretion in the performance and manage-ability of virtualization. Now, single server can handle multiple workloads with CPU utilization of 80% or greater. Today, we can shift an running virtual machine along with its live operating system and applications to physical host without downtime.

Another notion that one of the strengths of virtualization is security. In terms of security virtualization is so powerful that, it allows us to create 100% air gap(isolation) between two different/same operating systems running on same physical hardware. This can be great enhancement in adding high level security.

Providers of Virtualisation

There are lot of big players in market who provide services of virtualization. Every organization who is need of virtualization has to choose between myriad of service providers. It often becomes a difficult task to select right service provider which meets there demands. So before selecting a provider it is crucial for organization to collect information about all the providers and see which one better suits them. There can be different factors while enlisting the providers wiz. costing, technical support etc.

Today, VMware is leader in the market for its virtualization services. Not only it is available for commercial but also for personal use. There isn’t any major data center in the world that doesn’t use VMware. VMware’s vSphere initially know as VMware Infrastructure is commercial product which is a suite of virtualization products. It includes ESX/ESXi hypervisors that functions as a virtualization server.

There are many other service providers like Microsoft’s Hyper-V, Citrix’s Xen, RedHat’s RHEV, Oracle, Amazon’s EC2, Google etc.