Platform Invocation Services Using Virtual Machines

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***Abstract*— Cloud computing is a paradigm which offers services to most of the users worldwide. Pervasive applications from customers are hosted by large-scale Data Centres. In traditional Data Centres numbers of services are run onto the dedicated physical servers. Most of the time, these Data Centres do not use their full capacity in terms of resources. Here comes the virtualization concept. Virtualization is the key aspect for this paradigm in which resources are utilized by running virtual machines on a physical host [1]. A virtual machine placement in cloud computing approach will be implemented in our project by enhancing security to the existing approach and we also choose to dynamically allocate cloud services to a group of users by restricting the number of users who join in the group dynamically by providing a web interface for effective utilization of software resources.**

***Keywords*— Virtualization, Virtual Machines, vm's, Virtual Machine Creation, Placing Virtual machines in Cloud Computing.**

I. INTRODUCTION

In computing, virtualization [2] means to create a virtual version of a device or resource, such as a server, device, network or even and operating system where the framework divides the resource into one or more execution environments. We can treat the partitioning of hardware as an example of virtualization because you take one drive and partition it to create two separate hard drives.

As an application, especially a data-intensive application, often needs to communicate with related data frequently, the network I/O performance between the data centres that store the data and VMs that execute the applications could affect the performance of the applications significantly. Current VM placement policy mainly focuses on the effectiveness and efficiency of the computing resources utilization, whereas the network aspects are largely ignored. This might make a VM that executes an application to be placed on physical machines that are far away from the data centres that store the related data. As a result, the overall application performance and the system overhead would eventually deteriorate due to the costly data transfer time between the application and the data storage.

II. EXISTING SYSTEM

Here we mainly focus on "Ncomputing" [3] it is a technology that allows multiple users to share one computer simultaneously; this means that with NComputing you could have one ordinary desktop computer catering for up to 30 people or more at the same time.

How does it work?

The additional users connect to the shared computer using an NComputing device, the monitor, keyboard and mouse connect to the NComputing device, the device is then connected to the shared computer through either the Local Area Network OR directly from the NComputing Device to the computer. Here the shared computer acts as a server and on that shared computer we will connect the NComputing device and virtualized the storage, ram and etc. And it as some of the drawbacks. [4]

A. Drawbacks Of Existing System:

- They will use only Windows Platform operating systems.
- Buying application software's for all devices.
- They will install all the applications by their own. Service maintenance.
- Cost is expensive.

III.PROPOSED SYSTEM

In this paper, a virtual machine placement approach is proposed in such a way to minimize the data transfer time consumption. Also experiments are made to implement and evaluate the effectiveness of the proposed approach. Our simulation studies have shown that the proposed approaches are effective in optimizing the data transfer between the virtual machine and data, thus providing optimization of overall application performance.

A virtual machine (VM) is a separate and independent software instance that includes a full copy of an operating system and application software. A physical server prepared With a server virtualization hypervisor [5] such as Microsoft Hyper-V, VMware vSphere or Citrix XenServer can host multiple VMs while maintaining logical isolation between each machine.

A virtual machine program is a computer program that creates a virtual computer system, complete with virtual hardware devices. This virtual computer machine runs as a process in a window on your current operating system. You can boot an operating system installer disc (or live CD) inside the virtual machine, and the operating system will be tricked into thinking its running on a real computer. It will install and run just as it would on a real, physical machine. Whenever you want to use the operating system, you can open the virtual machine program and use it in a window on your current desktop. Your virtual machine's operating system is stored on a virtual hard drive a big, multi-gigabyte file stored on your hard drive. The file is presented to the operating system as a real hard drive. This means you won't have to mess around with partitioning.

A virtual machine gives a way to run another operating system's software. So, if any one of the user for example, Linux user can install windows in a virtual machine and run windows desktop programs in that virtual machine. Mac users can also use virtual machines to run windows software.

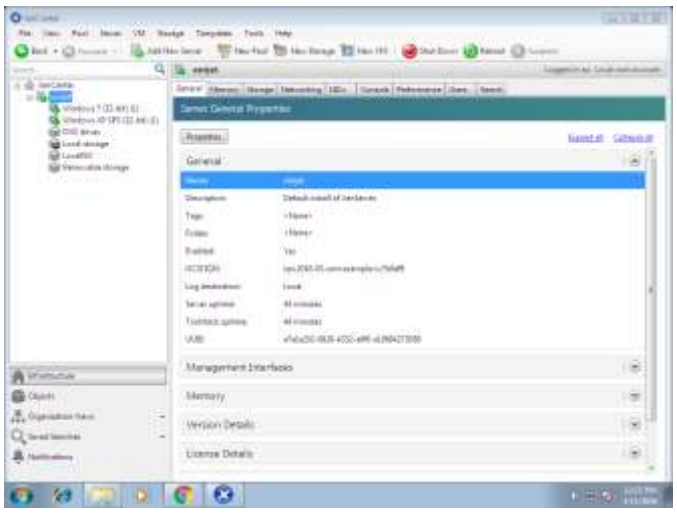
In our project we are using a specialized Operating System called a XENSERVER [6]; it emulates the PC client or server's CPU, memory, hard disk, network and other hardware resources completely, enabling virtual machines to share the resources. The Operating System can emulate multiple virtual hardware platforms that are isolated from each other, allowing virtual machines to run Linux and Windows server operating systems on the same underlying physical host.

Citrix XenServer is a leading server virtualization and hypervisor management platform that lowers the total cost of ownership for desktop, cloud and server virtualization infrastructures. Consolidation and containment of workloads on XenServer enables organizations of any vertical or size to transform their business IT compute infrastructures, tackling the IT datacenter challenges of today's modern businesses.

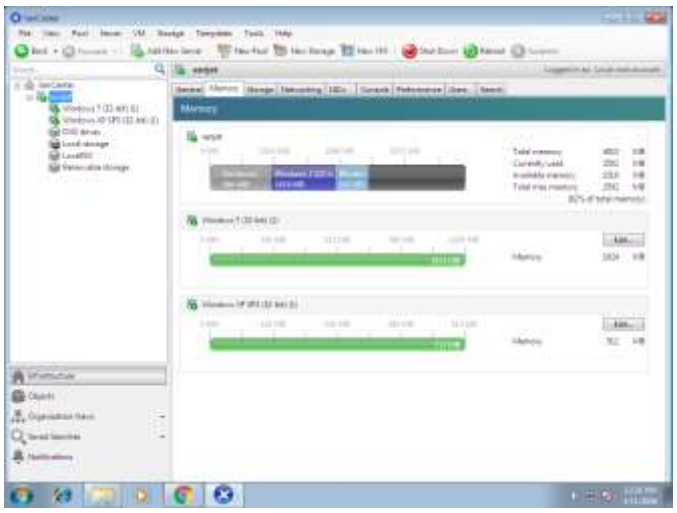
A. Advantages Of Proposed System:

- End user will use any type of Operating system (Windows, Linux, etc...)
- On-demand self –service. The ability for an end user to sign up and receive services without the long delays that have characterized traditional IT
- Need not to install any software and buying any hardware devices they can use our service.
- The end user simply giving the requirements of their system, we will creating the system basing on their given requirements.
- End-user need not to Maintenance the system.
- Low Cost (pay-as-you-use pricing model).
- The user simply accesses our service through web browser.

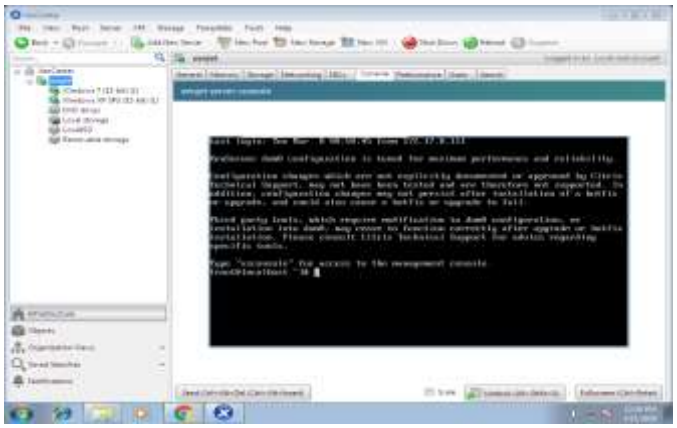
A. Citrix XenServer overall system configuration:



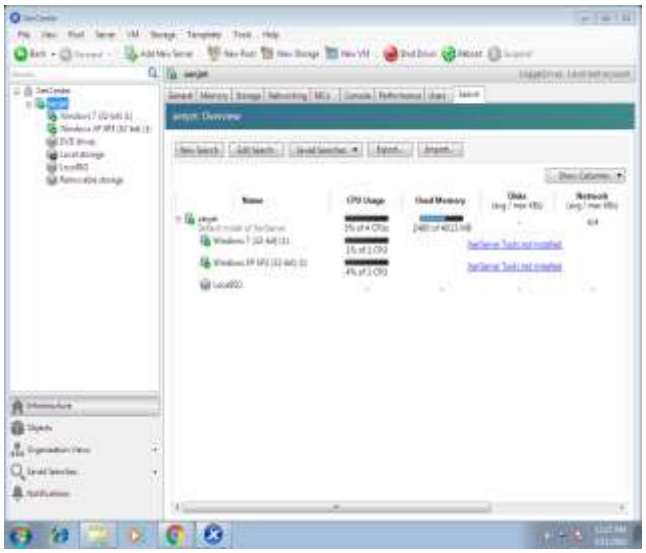
B. Memory allocation for server and individual VM's:



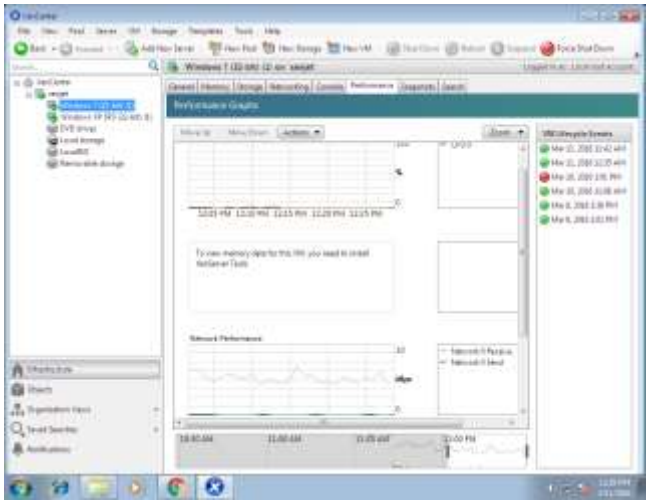
C. Console of the XenServer:



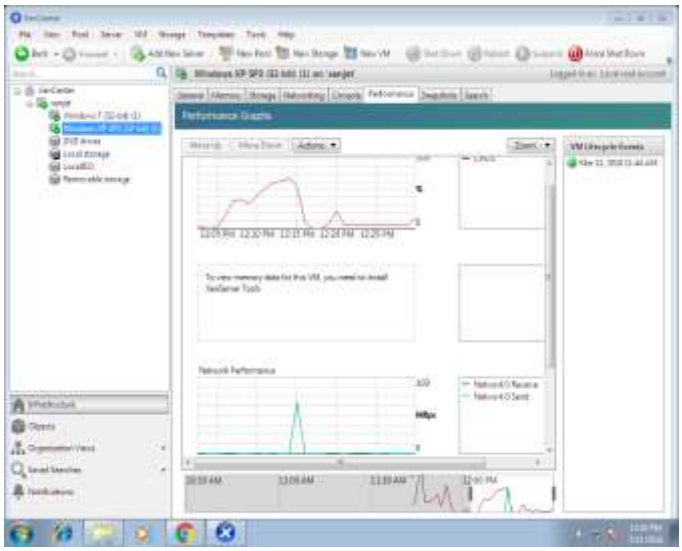
D. Usage of Memory for Server and Individual VM's:



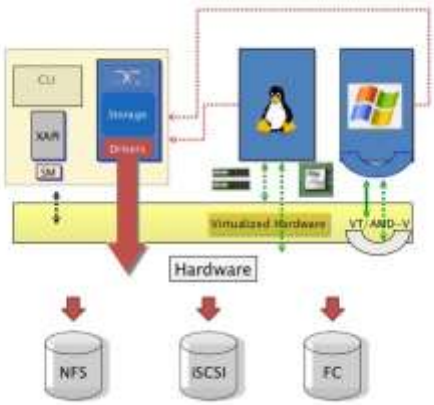
E. Performance Graph for Windows7 VM:



F. Performance Graph for Windows XP VM:



IV. SYSTEM ARCHITECTURE



V. CONCLUSIONS

Efficient placement of the VM can improve the overall performance of the system. Virtual machine placement is a technique which maps the VM to the appropriate physical machine. In this paper, we clearly mentioned an approach for the placement of virtual machine. This paper also discusses about how a virtual environment can be created in cloud by placing virtual machines. It is done by XenServer which acts as a service provider server; Xencenter is used for operating server and Xen app to gain access over virtual machine to users. Here virtual machines use server memory only. Means virtual machines created on server are run on server hardware only. So that the maintenance cost of many number of hardware resources are decreased. Due to dynamic memory allocation on the server for virtual machines, performance of each virtual machine is increased. This will increase overall performance of the applications. Users need not install any type of software, they need not maintain the hardware resources, their job is simply to request service provider through Xen app for different types of services they want for their needs. So that once service provider gave access to users through Xen app, clients risk will highly decrease and their applications are run on server only but not on their dedicated physical machines.

References

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