Case Study – 1
<u>Virtual Machines</u>

1) Introduction:

A Virtual Machine is an operating system or an app. environment that is installed as a software on our physical computer, which imitates dedicated hardware. The user has the same experience on a VM as they would have on a physical computer. Virtual machines (VMs) do not require any special kind of hardware requirements, but Virtualization does, however, require more bandwidth, memory (RAM), Storage and processing capacity than a traditional Linux server or desktop if the physical hardware is going to host multiple running VMs or Operating Systems. Virtual Machines can easily be easily moved, be copied and reassigned between host servers to optimize hardware resource utilization. Several vendors offer virtual machine software for free and some are paid also, but two main vendors dominate in the marketplace i.e. VMware and Microsoft. Many IT shops host noncritical apps on Microsoft Virtual Machines because the virtualization environment costs less than VMware's offerings and they are fast too. Several open source alternatives are also available & evolving rapidly, with new features and increased stability of their software, but do not have the same maturity or support options as these vendors are offering premium features.

2) Advantages & Disadvantages: -

Advantage: -

1.   Can use multiple operating system (OS) on the same computer at the same time.

2.   When you create your virtual machine, you create a virtual hard disk which is saved in local storage i.e. Hard disk. So, everything on that machine can crash like all the applications, etc., but if it does, it won't affect the host machine.

3.   Full compatibility with all system applications.

4.   Greater availability of the software and easier recovery in case of any disaster.

5.   Facility for running backups very easily.

6.   Support & maintenance of these software is simplified.

Disadvantage: -

1.   Virtual machines are less efficient than real machines because they access the hardware indirectly. Running the application or software on top of the host operating system (OS) means that it will have to request access to the hardware from the host which will slow the usability of the host computer.

2.   Although you save time during the implementation phases of virtualization, it costs users time over the long-run when compared to local systems. That is because there are some extra steps when we install a virtual machine and that must be followed to generate the desired result.

3.   If you're not familiar with the hardware and network aspects of the whole setup, it can be daunting to figure out. Routing rules & virtual local area networks (VLAN) continue to add complexity, especially if there is a security concern.

3) Literature Survey:

4) Conclusion:

5) Plagiarism Report: