

Performance Evaluation of VDI-Based Private Cloud Technology for Education and Research

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Abstract

Enhancing the educational and research environments in universities and research institutions is continually challenging. Currently, educational organizations provide physical facilities to their staff and students. Such setups can be expensive, inflexible and difficult to maintain and suffer from the limitations on the services provided by their traditional, Information Technology (IT), infrastructures to their various end users. Also, an overhead, which is caused by managing, upgrading, maintaining all the traditional IT components and services, is very high compared to virtualization environments. The aim is to utilize and to enhance one of the cloud computing technologies, which is Virtual Desktop Infrastructure (VDI), for supporting teaching and research activities within an educational organization. Cloud computing has redefined the view of computing resources as a framework where these resources are provisioned dynamically on demand. With cloud computing, these resources can be delivered to users across geographical and time boundaries. For example, virtualization stores the resulting virtualized desktop on a remote central server, instead of on the local storage of a remote client; thus, when users work from their remote desktop client, all of the programs, applications, processes, and data used are kept and run centrally. Therefore, there is a variety of vendors for varied VDI platforms and hypervisors by which virtualization environments can be built. Thus, when applying virtualization to an infrastructural environment, which VDI platform among others is better for universities and research institutes to be adopted? The performance evaluation for only two wellknown VDI platforms as a research scope, which are VMware Horizon and Citrix XenDesktop, will be conducted by using them in different architectural designs in this research project as a

final answer to the stated important question.

Keywords:

Virtual Desktop Infrastructure, Cloud Computing, Virtual Education Lab,
Hypervisor
