Resource Allocation Strategy between Heterogeneous Systems in XenServer

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ABSTRACT

Recently, Cloud computing becomes one of the rapid growth technologies. Based on the Cloud computing, new services dramatically increase on the Internet. Basically the Cloud computing uses the virtualization technology to provide dynamic resources to customers. Therefore, the virtualization technology becomes one of the important part of Cloud computing. The virtualization technology can enhance the hardware utilization and reduce infrastructure maintenance costs. However, as the virtual operating systems diversified, how to allocate the resources to the virtual operating systems becomes an important issue in the virtualization technology. In this thesis, several experiments are designed to test the performance of operating systems in XenServer that is an open source project of virtualization technology. The performance of an IBM PC is tested and compared to those of the virtual machines in XenServer. The results show that XenServer can fairly allocate the CPU time to each virtual machine in spite of the virtual machines run different operating systems. However, if the total requirement of CPU time over the physical CPU time that the hardware can provide, the performance of each virtual machine will decrease. The user may be dissatisfied by the degradation of performance. However, if the resources can be allocated carefully, the performance of virtual machine can compete with an IBM PC.

Keywords : Cloud Computing、Virtualization Technologies、Resource Allocation Strategy

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