MINI PROJECT – II

(2018-2019)

Application Performance Isolation in Virtualization

Group – 10

SYNOPSIS

Institute of Engineering & Technology

Team Members

Shivam Arora (161500516)

Varun Khandelwal (161500609)

Kartik Sharma (161500259)

Muqeet Zama Khan (161500333)

Supervised By:
Mr. Ambrish Gangal

(Asst. Professor)

Department of Computer Engineering and Applications

About the Project

Abstract: Performance isolation is the desirable thing in virtual machine based infrastructure to meet Service Level Objectives. Many experiments in this area measure the performance of applications while running the applications in different domains, which gives an insight into the problem of isolation. we run different kind of benchmark s simultaneously in virtual environment to evaluate the isolation strategy provided by the hypervisor.

Application Type:

Cloud Computing

Virtualization

Hypervisor used:

VmWare Workstation

Motivation: Modern data centers use virtual machine based implementation for numerous advantages like resource isolation, hardware utilization, security and easy management. Applications are generally hosted on different virtual machines on a same physical machine. Virtual machine monitor like VM workstation is a popular tool to manage virtual machines by scheduling them to use resources such as CPU, memory and network. Performance isolation is the desirable thing in virtual machine based infrastructure to meet Service Level Objectives. Many experiments in this area measure the performance of applications while running the applications in different domains, which gives an insight into the problem of isolation. In this paper we run different k ind of benchmark s simultaneously in Xen environment to evaluate the isolation strategy provided by VM workstation. Results are presented and discussed for different combinations and a case of I/O intensive applications with low response latency has been presented.

Method: Experiments are designed to evaluate the isolation provided by the VMware virtual machine monitor. Many authors had quantified a number of virtualization platforms with different experiments. Our experiments differ from these findings in following ways.

- Isolation studies so far show isolation among same type of applications on a single physical server. In addition to the findings of others experiments, our approach

shows the isolation when running different resource intensive applications simultaneously.

- Effect of running an I/O application with varying CPU intensive workloads has been executed in different domains using two different schedulers to quantify the performance of latency driven applications.

Outcomes/Requirements

Intended outcome :

1. To characterize the behavior of scheduler running two non-similar resource intensive applications.
2. Application placement: where to place applications in data center to get maximum isolation and fairness.

Sowtware/Hardware Requirements:

1. Personal computer with basic hardware configuration
2. VMware workstation

- iso image ubuntu
- iso image windows

3. EXSi server
4 Browser: Mozilla Firefox or Google Chrome