MIECT: Integrated Management of Networks and Services   2011-12
Practical Exercise: Evaluation of Virtualization Technologies
Duration: 1 week   v1.0

1   Objective

Evaluate how the different virtualization products can be used in a multi-user environment. Understand some of the limitations and advantages of virtualization products.

2   Guidelines

2.1   Prepare Environment

Install an updated version of "VirtualBox" in the laboratory desktops. This software will allow the creation of an isolated testing environment for evaluating other products.

Select one of the following products for evaluation:

- MS Virtual Server

- VMWare Server

- VMWare ESXi

- XEN

- KVM

- OpenVZ

Gather information about how to install the selected product and install it inside a VirtualBox guest. This guest will act as the host for the other virtual environments.
Try to use at least 8GB of Disk and 1GB of RAM for the guest system.

The resulting environment will look like:

```
Desktop -> Virtualbox -> selected solution
```

If required, select an operating system compatible with the selected product. This operating system should allow to run as a host to that product, not as a guest. Example: MS Virtual Server can only be installed in a windows host. So, it is required to install a Windows instance, in order to run the MS Virtual Server software.
Install a Ubuntu 11.04 guest inside the selected product. An image of this CD is available at: `Moodle`.
This guest machine should have at least 256MB RAM and 4GB of hard disk. The resulting environment will be:

```
Desktop -> Virtualbox -> selected solution -> Ubuntu
```

During this process, take notes regarding which operating systems are supported, how virtualization is supported, and how guest can be managed by a service provider. In this last aspect focus in the features and easy of management for hundreds or thousands of guests.

2.2   Benchmark and Analysis

Now that an evaluation environment is available, you should be able to evaluate the performance the guest operating system under the product selected.
For the purpose of benchmarking, make use of the GeekBench software available at `http://www.primatelabs.ca/geekbench` and compare the guest environment with the native hardware.

After the test is complete, you may repeat it for the purpose of creating load, and then subjectively evaluate how ping latency, load, and general interaction is effected.

You may also install another Ubuntu guest and compare how the load in one virtual machine effect the other (you may use a subjective test like previously).

3   Assignment

Prepare a 15 minute presentation summarizing the main characteristics of the product, usability and the result of the performance evaluation. This document will be presented in the next class.