SLIIT

COMPUTING | BUSINESS | ENGINEERING

IT3010
Network Design & Management
3rd Year, 1st Semester

< Lab Report>

<Practical 02>

Submitted to

Sri Lanka Institute of Information Technology

In partial fulfillment of the requirements for the

Bachelor of Science Special Honors Degree in Information Technology

<<08.03.2019>>

Declaration

I certify that this report does not incorporate without acknowledgement, any material previously submitted for a degree or diploma in any university, and to the best of my knowledge and belief it does not contain any material previously published or written by another person, except where due reference is made in text.

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Question 2

01. VMware Workstation (IT17081726)

02. Oracle VM Virtual Box (IT17048088)

03. Microsoft Virtual Pc (IT17055154)

01.VMware Workstation

VMware vSphere leverages the power of virtualization to transform datacenters into simplified cloud computing infrastructures and enables IT organizations to deliver flexible and reliable IT services. VMware vSphere virtualizes and aggregates the underlying physical hardware resources across multiple systems and provides pools of virtual resources to the datacenter.

02.Oracle VM Virtual Box

Oracle VM Virtual Box 5.1 allows you to configure up to 8 virtual NICs (Network Interface Controllers) for each guest vm (although only 4 are exposed in the GUI) and for each of these NICs you can configure:

03.Microsoft Virtual Pc

The Virtual PC host application emulates the Intel DEC 21140A network card. For each virtual machine (VM), you can install up to four such emulated network cards. WVPC's Create Virtual Machine Wizard connects to one wired and one wireless host network adapter by connecting one or two network adapters by default.

Question 3

VMware Workstation – Interfaces

The type of network adapters that are available depend on the following factors:

■The virtual machine version, which depends on what host created it or most recently updated it.
■Whether the virtual machine has been updated to the latest version for the current host.
■The guest operating system.

The following NIC types are supported:

E1000 Emulated version of the Intel 82545EM Gigabit Ethernet NIC, with drivers available in most newer guest operating systems, including Windows XP and later and Linux versions 2.4.19 and later.

Flexible Identifies itself as a Vlance adapter when a virtual machine boots, but initializes itself and functions as either a Vlance or a VMXNET adapter, depending on which driver initializes it. With VMware Tools installed, the VMXNET driver changes the Vlance adapter to the higher performance VMXNET adapter.

Vlance Emulated version of the AMD 79C970 PCnet32 LANCE NIC, an older 10 Mbps NIC with drivers available in most 32bit guest operating systems except Windows Vista and later. A virtual machine configured with this network adapter can use its network immediately.

VMXNET Optimized for performance in a virtual machine and has no physical counterpart. Because operating system vendors do not provide built-in drivers for this card, you must install VMware Tools to have a driver for the VMXNET network adapter available.

VMXNET 2 (Enhanced) Based on the VMXNET adapter but provides high-performance features commonly used on modern networks, such as jumbo frames and hardware offloads. VMXNET 2 (Enhanced) is available only for some guest operating systems on ESX/ESXi 3.5 and later.

VMXNET 3 Next generation of a Para virtualized NIC designed for performance. VMXNET 3 offers all the features available in VMXNET 2 and adds several new features, such as multiqueue support (also known as Receive Side Scaling in Windows), IPv6 offloads, and MSI/MSI-X interrupt delivery. VMXNET 3 is not related to VMXNET or VMXNET 2.

Oracle VM Virtual Box – Interfaces

Which virtualized NIC-type is exposed to the Guest. Options available are:

- PCnet-PCI II (Am79C970A)
- PCnet-Fast III (Am79C973)
- Intel PRO/1000 MT Desktop (82540EM)
- Intel PRO/1000 T Server (82543GC)
- Intel PRO/1000 MT Server (82545EM)
- Paravirtualized network adapter (virtio-net)

PCNet FAST III is the default. It is supported by almost all operating systems and the GNU GRUB boot manager. As an exception, the Intel PRO / 1000 Family Adapter is suitable for some guest operating system types that drivers for PCNet cards such as Windows Vista are no longer shipped.

Microsoft Virtual Pc – Interfaces

The following interfaces are supported by Windows Virtual PC.

IVMAccountant - Provides access to accounting-related information for a virtual machine (VM).

IVMDisplay - Controls the display settings of a VM.

IVMDVDDrive - Controls a CD-ROM or DVD-ROM drive within a VM.

IVMDVDDriveCollection - Defines the collection of CD and DVD drives within the VM.

IVMDVDDriveEvents - Defines the outgoing event interface for the IVMDVDDrive interface.

Question 4

E1000 - Emulated version of the Intel 82545EM Gigabit Ethernet NIC, with drivers available in most newer guest operating systems, including Windows XP and later and Linux versions 2.4.19 and later.

PCNet FAST III - is the default. It is supported by almost all operating systems and the GNU GRUB boot manager. As an exception, the Intel PRO / 1000 Family Adapter is suitable for some guest operating system types that drivers for PCNet cards such as Windows Vista are no longer shipped.

IVMAccountant - Provides access to accounting-related information for a virtual machine (VM).

There are some properties in the interface card.

1.CPU Utilization: get the percentage of current CPU utilization for this virtual machine.
2.CPU Utilization history: The recent CPU utilization of this virtual machine (as an array of percentage values).
3.DiskBytesRead: The total number of bytes read by all storage controllers for this virtual machine.
4.DisksBytesWritten: The total number of bytes written by all storage controllers for this virtual machine.
5.NetworkBytesRecieved: The total number of bytes received by all virtual network adapters for this virtual machine.
6.NetworkBytesSent: The total number of bytes sent by all virtual network adapters for this virtual machine.
7.UpTime: The number of seconds that the virtual machine has been running.