**Chapter 14 - Virtual Machines**

**TRUE/FALSE QUESTIONS:**

T F 1) Virtualization technology enables a single PC or server to simultaneously

run multiple operating systems or multiple sessions of a single OS.

T F 2) VMM allows multiple VMs to safely coexist on a single physical server

host and share that host’s resources.

T F 3) The hyperfile sits between the hardware and the VMs and acts as a

resource broker.

T F 4) There are currently more virtual servers deployed in the world than

physical servers.

T F 5) A key aspect of server virtualization is that VMs cannot be viewed as

network resources.

T F 6) Virtual Machine technologies are also used in desktop environments to

run multiple operating systems.

T F 7) A virtual server sees all of the resources of the physical host.

T F 8) Once the virtual machine is created it can be powered on like a physical

server and utilized in the manner of a physical server.

T F 9) Virtual machines are made up of files.

T F 10) Type-2 hypervisors are considered to be more secure than the

Type-1 hypervisors.

T F 11) Adding additional vCPUs in a VM is a difficult and time-consuming

process.

T F 12) Protection rings describe level of access or privilege inside of a

computer system.

T F 13) The process of reclaiming older pages that are not being used is done

through ballooning.

T F 14) The disadvantage to a directly connected I/O device is that the virtual

machine is tied to the physical server it is running on.

T F 15) Virtual machines are hosted via the infrastructure services in the VMkernel.

**MULTIPLE CHOICE QUESTIONS:**

1. The solution that enables virtualization is a \_\_\_\_\_\_\_\_\_\_ .

A) round robin B) virtual machine monitor

C) hyperfile D) DalviB600

1. The number of guests that can exist on a single host is measured as a \_\_\_\_\_\_\_\_ .

A) VMM ratio B) hypervisor ratio

C) consolidation ratio D) broker ratio

1. The concept of a hypervisor is the most common basis for classifying ­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_ approaches.

A) virtual machine B) consolidation

C) ratio D) round robin

1. The \_\_\_\_\_\_\_\_ facilitates the translation and I/O from the virtual machine to the physical server devices.

A) hardware B) memory

C) hypervisor D) network interface card

1. There are \_\_\_\_\_\_\_ types of hypervisors, distinguished by whether there is another operating system between the hypervisor and the host.

A) two B) three

C) four D) five

1. A \_\_\_\_\_\_\_\_ hypervisor has much better performance characteristics than the Type-2 hypervisor.

A) Type-1 B) Type-3

C) Type-4 D) Type-5

1. User applications run in \_\_\_\_\_\_ which is the least trusted area.

A) Ring 0 B) Ring 1

C) Ring 2 D) Ring 3

1. Hypervisors run in \_\_\_\_\_\_\_\_ controlling hardware access for the virtual machines they host.

A) Ring 0 B) Ring 1

C) Ring 2 D) Ring 3

1. \_\_\_\_\_\_\_ is a commercially available hypervisor from VMware that provides users a bare metal hypervisor to host virtual machines on their servers.

A) Zygote B) Dalvi06B

C) JVM D) ESXi

1. \_\_\_\_\_\_\_\_ permits the relocation of the data files that compose a virtual machine while that virtual machine is in use.

A) DRS B) Storage VMotion

C) Fault Tolerance D) Storage and Network I/O Control

1. \_\_\_\_\_\_\_\_\_ can power-off and on physical hosts as they are needed.

A) Storage and Network I/O Control B) DRS

C) DPM D) Resource Scheduler

1. \_\_\_\_\_\_\_\_ uses various replication technologies to copy selected virtual machines to a secondary site in the case of a data center disaster.

A) Site Recovery Manager B) DPM

C) Fault Tolerance D) Storage VMotion

1. The \_\_\_\_\_\_\_\_\_\_ is the core of the hypervisor and performs all the virtualization functions.

A) VMkernel B) container

C) JVM D) chbind utility

1. \_\_\_\_\_\_\_\_ promise of “Write Once, Run Anywhere” provides an agile and simple deployment model, allowing applications to be developed independent of the execution platform.

A) Linux’s B) Java’s

C) Docker’s D) Vserver’s

1. The concept of \_\_\_\_\_\_\_\_\_, as used in Linux, refers to a partitioning of the privileges available to a root user.

A) root isolation B) hosting platform

C) capabilities D) process isolation

**SHORT ANSWER QUESTIONS:**

1. A machine with \_\_\_\_\_\_\_\_\_ software can host numerous applications, including those that run on different operating systems, on a single platform.
2. A VMM is commonly known today as a \_\_\_\_\_\_\_\_ .
3. The \_\_\_\_\_\_\_\_\_ , or hypervisor, abstracts the physical hardware from the virtual machines it supports.
4. A \_\_\_\_\_\_\_\_ is a software construct that mimics the characteristics of a physical server.
5. An operating system in a virtual machine accesses the resource that is presented to it by the Virtual Machine Monitor or \_\_\_\_\_\_\_\_\_ .
6. VMware Workstation and Oracle VM Virtual Box are examples of \_\_\_\_\_\_\_\_ hypervisors.
7. \_\_\_\_\_\_\_\_ is a software-assisted virtualization technique that uses specialized APIs to link virtual machines with the hypervisor to optimize their performance.
8. When multiple VMs are contending for a processor, the \_\_\_\_\_\_\_\_ acts as the traffic controller, scheduling processor time for each VM’s request as well as directing the requests and data to and from the virtual machines.
9. The \_\_\_\_\_\_\_\_\_ is the central router of information and controls access to all of the physical resources of the hardware.
10. Ring \_\_\_\_\_\_\_ is the most trusted layer and is where the operating system kernel works and can interact directly with hardware.
11. Similar to data de-duplication, \_\_\_\_\_\_\_\_\_\_ is a feature built into hypervisors that helps optimize memory usage.
12. The capability to allocate more memory than physically exists on a host is called \_\_\_\_\_\_\_\_\_\_ .
13. \_\_\_\_\_\_\_\_\_ creates a lockstep copy of a virtual machine on different host so that if the original host suffers a failure, the virtual machine’s connections get shifted to the copy without interrupting users or the application they are using.
14. The goal of a \_\_\_\_\_\_\_\_\_\_ is to provide a runtime space for a set of Java code to run on any operating system staged on any hardware platform, without needing to make code changes to accommodate the different operating systems or hardware.
15. The \_\_\_\_\_\_\_\_\_\_ is described as being an abstract computing machine, consisting of an instruction set, a program counter register, a stack to hold variables and results, and a heap for runtime data and garbage collection, and a method area for code and constants.