

VIRTUAL MACHINE

Virtual machines are software's on which other software's can be executed as they are executing on a physical machine.

There are two types of virtual machine:

- 1) Application/ process virtual machine.
- 2) System/hardware virtual machine.

1) Application/process virtual machine: In this we can take example of JVM. Because of JVM, Java is a platform independent language.

2) System/hardware virtual machine: In this we can take example of Virtual Box. Which gives as ability to run multiple of operating systems on a single physical machine. Here operating system is also a programming language which should be supported by Virtual Box.

Some advantages of Virtual Machine:

- Allows use of multiple operating system on a single physical computer interdependently.
- Easy to manage and maintain.

Some drawbacks of Virtual Machine:

- Not as efficient as a physical computer.
- Multiple virtual machines running on a single physical machine can deliver unstable performance.

Viva Vice on Virtual Machine

Q1. What is Virtualization?

The process of creating virtual versions of physical components i.e., Servers, Storage Devices, Network Devices on a physical host is called virtualization.

Q2. Mention what are the different types of virtualization available?

Application virtualization, Presentation virtualization, Network virtualization and Storage virtualization.

Q3. What is virtual networking?

A network of VMs running on a physical server that is connected logically with each other.

Q4. What is vSS?

vSS stands for Virtual Standard Switch which works like a physical switch, automatically detects a VM which want to communicate with other VM. It is responsible for communication of VMs hosted on a single physical host.

Q5. What is vDS?

vDS stands for Virtual Distributed Switch acts as a single switch in a whole virtual environment and is responsible to provide central provisioning, administration, and monitoring of the virtual network.

Q6. What is datastore?

Datastore is a storage location where virtual machine files are stored and accessed.

Q7. What is the .vmx file?

It is the configuration file of a Virtual Machine.

Q8. What information .nvram file stores?

It stores BIOS related information of a VM.

MCQs on Virtual Machine

Q1. Which of the following is another name for system virtual machine ?

- a) hardware virtual machine
- b) software virtual machine
- c) None of the mentioned

Q2. Which of the following provide system resource access to virtual machines ?

- a) VMM

- b) VMC
- c) All of the mentioned

Q3. Your colleague has accidentally allocated more vRAM than your company are licensed for. What will happen to your virtual machines?

- a) All VM's will be Powered Off
- b) New VM's can not be Powered On
- c) Nothing will happen

Q4. Point out the wrong statement :

- a) Load balancing virtualizes systems and resources by mapping a logical address to a physical address
- b) Multiple instances of various Google applications are running on different hosts
- c) Google uses hardware virtualization

Q5. Point out the correct statement :

- a) A virtual machine is a computer that is walled off from the physical computer that the virtual machine is running on
- b) Virtual machines provide the capability of running multiple machine instances, each with their own operating system
- c) All of the mentioned

Q6. A memory reservation defines:

- a) the amount of virtual machine memory that can be paged to the VM kernel swapfile
- b) the amount of physical memory that is guaranteed to the VM
- c) the amount of host memory reserved for the VMkernel

Q7. Which of the following formulas defines the amount of virtual machine memory that will always be composed of disk pages?

- A. Memory allocated -(minus) memory limit
- B. Memory limit -(minus) memory reservation

C. Memory allocated -(minus) memory available

Q8. For paying an extra level of indirection for each memory access, Virtual machine monitor maintains

- a)Shadow page table
- b)Stack table
- c)Memory stack

Q9. Two processors running one is user process, other is operating system process, latter is called

- a)Kernel process
- b)Supervisor process
- c)both a and b

Q10. Software that supports Virtual machines, is called

- a)Virtual machine monitor
- b)Hypervisor
- c)both a and b

MCQs Answers

Q1. (a)

Q2. (a)

Q3. (b)

Q4. (c)

Q5. (c)

Q6. (c)

Q7. (c)

Q8. (a)

Q9. (c)

Q10. (c)

References:

1. Sebesta, "Concept of programming Language", Pearson Edu
2. Louden, "Programming Languages: Principles & Practices" , Cengage Learning
3. Tucker, "Programming Languages: Principles and paradigms ", Tata McGraw -Hill.
4. E Horowitz, "Programming Languages", 2nd Edition, Addison Wesley

Related posts:

1. Sequence Control & Expression | PPL
2. PPL:Named Constants
3. Parse Tree | PPL | Prof. Jayesh Umre
4. Basic elements of Prolog
5. Loops | PPL | Prof. Jayesh Umre
6. Subprograms Parameter passing methods | PPL | Prof. Jayesh Umre
7. Programming Paradigms | PPL | Prof. Jayesh Umre
8. Subprograms Introduction | PPL | Prof. Jayesh Umre
9. Phases of Compiler | PPL | Prof. Jayesh Umre
10. Parse Tree | PPL
11. Influences on Language design | PPL | Prof. Jayesh Umre
12. Fundamentals of Subprograms | PPL | Prof. Jayesh Umre
13. Programming Paradigm
14. Influences on Language Design
15. Language Evaluation Criteria
16. OOP in C++ | PPL
17. OOP in C# | PPL
18. OOP in Java | PPL
19. PPL: Abstraction & Encapsulation

20. PPL: Semaphores
21. PPL: Introduction to 4GL
22. PPL: Variable Initialization
23. PPL: Conditional Statements
24. PPL: Array
25. PPL: Strong Typing
26. PPL: Coroutines
27. PPL: Exception Handler in C++
28. PPL: OOP in PHP
29. PPL: Character Data Type
30. PPL: Exceptions
31. PPL: Heap based storage management
32. PPL: Primitive Data Type
33. PPL: Data types
34. Programming Environments | PPL
35. PPL: Local referencing environments
36. Generic Subprograms
37. Local referencing environments | PPL | Prof. Jayesh Umre
38. Generic Subprograms | PPL | Prof. Jayesh Umre
39. PPL: Java Threads
40. PPL: Loops
41. PPL: Exception Handling
42. PPL: C# Threads
43. Pointer & Reference Type | PPL
44. Scope and lifetime of variable
45. Design issues for functions
46. Parameter passing methods

47. Fundamentals of sub-programs
48. Subprograms
49. Design issues of subprogram
50. Garbage Collection
51. Issues in Language Translation
52. PPL Previous years solved papers
53. Type Checking | PPL | Prof. Jayesh Umre
54. PPL RGPV May 2018 solved paper discussion| Prof. Jayesh Umre
55. PPL Viva Voce
56. PPL RGPV June 2017 Solved paper | Prof. Jayesh Umre
57. Concurrency
58. Basic elements of Prolog
59. Introduction and overview of Logic programming
60. Application of Logic programming
61. PPL: Influences on Language Design
62. Language Evaluation Criteria PPL
63. PPL: Sequence Control & Expression
64. PPL: Programming Environments
65. PPL: Virtual Machine
66. PPL: Programming Paradigm
67. PPL: Pointer & Reference Type
68. try-catch block in C++