



3.4.2 Virtual Machines

Computer Science (9608)

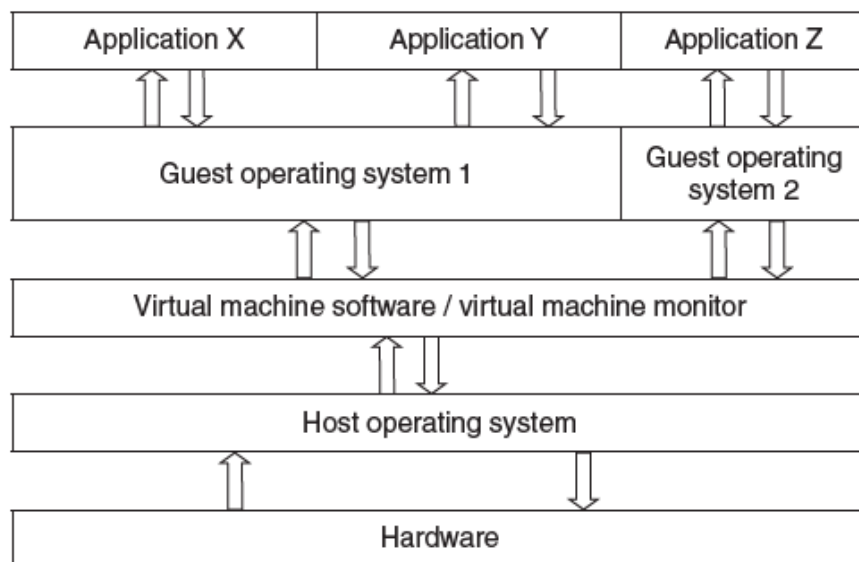
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1 (c) A company develops software. It provides virtual machines for its software developers. The company has a large number of clients who use a wide range of hardware and software.

- (i) Explain the term virtual machine. Ensure that your answer includes the terms hardware and software. [2]
- (ii) Give one benefit to the company of using virtual machines. [1]
- (iii) Give one drawback to the company of using virtual machines. [1]

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3 (a) The following diagram shows how applications X, Y and Z can run on a virtual machine system.



(i) The virtual machine software undertakes many tasks.

Describe **two** of these tasks.

[2]

(ii) Explain the difference between a **guest operating system** and a **host operating system**.

[2]

(b) A company uses a computer as a web server. The manufacturer will no longer support the computer's operating system (OS) in six months' time. The company will then need to decide on a replacement OS.

The company is also considering changing the web server software when the OS is changed.

Whenever any changes are made, it is important that the web server service is not disrupted. In developing these changes, the company could use virtual machines.

(i) Describe **two** possible uses of virtual machines by the company.

[4]

The web server often has to handle many simultaneous requests.

(ii) The company uses a virtual machine to test possible solutions to the changes that they will need to make.

Explain **one** limitation of this approach.

[2]

