SEMtech!

Student Engagement & Mentoring in Technology

Virtualization Questions

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1. Cross-Platform Compatibility

Scenario:
An employee uses a Linux-based workstation but occasionally needs to run Windows-only applications for finance software. You are tasked with providing a cost-effective and low-maintenance solution.

Question:
What virtualization approach should you recommend?
A. Dual-booting both operating systems
B. Installing a Type 2 hypervisor on the Linux machine
C. Replacing the Linux workstation with a Windows PC
D. Using a Type 1 hypervisor on a separate physical server

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2. Cloud Deployment

Scenario:
Your company is migrating its internal web applications to a cloud-based Infrastructure as a Service (IaaS) provider. During onboarding, someone asks who is responsible for maintaining the hypervisor layer.

Question:
Who holds responsibility for managing the hypervisor in this setup?
A. Your company's internal IT department
B. The IaaS cloud provider
C. A third-party consulting service
D. There is no hypervisor used in cloud services

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3. Resource Optimization

Scenario:
A data center is experiencing increased server sprawl, with many underutilized machines. You are asked to propose a solution that consolidates workloads while maximizing hardware utilization.

Question:
What is the most effective solution?
A. Virtualization using a Type 1 hypervisor
B. Adding more physical servers
C. Migrating to laptops with Type 2 hypervisors
D. Splitting applications across more physical machines

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4. Software Development Testing

Scenario:
Your development team frequently tests applications on different operating systems (Linux, Windows, macOS). They want to avoid purchasing multiple machines for each OS.

Question:
What's the best solution for enabling multi-OS testing on a single device?
A. Containerization
B. Type 1 hypervisor
C. Type 2 hypervisor
D. Purchase multiple desktops for each OS

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5. Virtual Desktop Infrastructure (VDI)

Scenario:
Your organization is considering implementing a Virtual Desktop Infrastructure to allow employees to access desktop environments remotely.

Question:
Which type of hypervisor is best suited for hosting the virtual desktops in your on-premises data center?
A. Type 2 hypervisor

B. No hypervisor needed
C. Type 1 hypervisor
D. Install the OS directly on user devices

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6. IT Budget Constraints

Scenario:
You are supporting a nonprofit with a very limited IT budget. The team needs to run a few older applications that require Windows XP, but all machines are running newer macOS systems.

Question:
Which option balances compatibility, cost-efficiency, and usability?
A. Purchase legacy hardware
B. Install a Type 2 hypervisor on macOS devices
C. Convert all devices to Windows XP
D. Upgrade all software to match macOS compatibility

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7. Security Responsibilities in the Cloud

Scenario:
Your organization uses a cloud provider for hosting its virtual machines. A recent vulnerability in a hypervisor-based attack was in the news, and your CISO asks what your team must secure.

Question:
Which part of the virtual stack is your responsibility in an IaaS environment?
A. Physical hardware
B. Hypervisor
C. Guest operating system and applications
D. Data center cooling infrastructure

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8. Migrating Legacy Systems

Scenario:
A government agency needs to preserve access to legacy software that runs only on deprecated hardware. They want to virtualize this environment for long-term support.

Question:
What would be the best virtualization strategy?
A. Move the software to modern hardware without changes
B. Use a Type 2 hypervisor on existing machines to virtualize the legacy OS
C. Discontinue the software and find a replacement
D. Wait until physical hardware fails and then decide