

HW9.4. Virtual Memory Potpourri

Q1: Which of the following statements about virtual memory are true?

☒ (a) Virtual memory allows programs to access more memory than is available in the real primary memory of the machine.

☐ (b) Virtual memory reduces memory access latency.

☒ (c) Virtual memory provides protection for the operating system.

☒ (d) Virtual memory gives programs their own address space (starting at address zero).

☒ (e) The size of virtual memory can be smaller than the size of physical memory.

Select all possible options that apply.

✓ 100%

Q2: Which is the primary need for a translation look-aside buffer (TLB) when using virtual memory?

☒ (a) It significantly reduces the average access time to memory by caching page table information.

☐ (b) It is used to keep copies of the page protection information so that access can be checked before retrieving pages from secondary storage.

☐ (c) It solves the problem of locality of reference when pages which are stored a long way from each other are accessed at the same time.

☐ (d) It buffers pages in physical memory so that access to them is faster.

Select all possible options that apply.

✓ 100%

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Homework 9

Assessment overview

Total points: 65/100

Score: 65%

Question

Value: 5

History: 5

Awarded points: 5/5

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Previous question

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Attached files

No attached files

Attach a file

Attach text

Correct answer

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VM allows for a lot of security, because it allows for different programs to have different address spaces without using 32-bits worth of space per program. On the other hand, it does take more than one access per virtual access, so there is some tradeoff. It's almost always worth it, though.

Q2: Which is the primary need for a translation look-aside buffer (TLB) when using virtual memory?

(a) It significantly reduces the average access time to memory by caching page table information.






TLB mainly serves as a cache for pages. As such, it reduces the average access time to memory. The other choices are untrue, as the TLB is by design minimal, with no real data stored. Also, pages are already in physical memory.

Submitted answer 2 correct: 100%



Submitted at 2022-11-20 04:41:51 (PST)

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- (e) The size of virtual memory can be smaller than the size of physical memory. 
-  100%

Q2: Which is the primary need for a translation look-aside buffer (TLB) when using virtual memory?

- (a) It significantly reduces the average access time to memory by caching page table information. 
-  100%

Submitted answer 1 **partially correct: 50%**

Submitted at 2022-11-20 04:41:42 (PST)



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