

Unit 5 - Week 4

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

Week 4

• Traps, Trap Handlers

• Kernel Data Structures, Memory Management

• Segmentation Review, Introduction to Paging

○ Quiz : Assignment 4

○ Week 4 Feedback Form

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

Assignment Solution

Download Videos

Text Transcripts

Assignment 4

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-26, 23:59 IST.

1) When using segmentation(without paging) in x86, average number of memory accesses per virtual memory access is closest to. **1 point**

- 1
 2
 3
 4

No, the answer is incorrect.
Score: 0

Accepted Answers:
1

2) Which of the following are true? **1 point**

- lidt is a privileged instruction.
 IDT lives in the kernal address space.
 lgdt is a privileged instruction.
 Every process has its own GDT

No, the answer is incorrect.
Score: 0

Accepted Answers:
lidt is a privileged instruction.
IDT lives in the kernal address space.
lgdt is a privileged instruction.
Every process has its own GDT

3) Consider a process executing on an operating system that uses demand paging. The average time for a memory access in the system is M units if the corresponding memory page is available in memory, and D units if the memory access causes a page fault. It has been experimental measured that the average time taken for a memory access in the process is X units? **1 point**

- $(D - M) / (X - M)$
 $(X - M) / (D - M)$
 $(D - X) / (D - M)$
 $(X - M) / (D - X)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $(X - M) / (D - M)$

4) Consider a machine with 64 MB physical memory and a 32-bit virtual address space. If the page size is 4KB, what is the approximate size of the page table? **1 point**

- 16 MB
 8 MB
 2 MB
 24 MB

No, the answer is incorrect.
Score: 0

Accepted Answers:
2 MB

5) When process traps in the user space, the operating system notifies the corresponding interrupt handler. And in doing so the control first has to be shifted from user to kernel space after saving the current program counter and other necessary information on stack. Which stack can be used for this? **1 point**

- User stack
 Kernel stack
 Either can be used

No, the answer is incorrect.
Score: 0

Accepted Answers:
Kernel stack

6) If an Operating system provides 32 system calls. How many entries does IDT(Interrupt Descriptor Table) have for these system calls? **1 point**

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) 1

7) When interrupt occurs during privileged which of the following registers have consistency guaranteed by hardware across interrupt handling? **1 point**

- EFLAGS
 CS
 EIP
 ESP

No, the answer is incorrect.
Score: 0

Accepted Answers:
EFLAGS
CS
EIP

8) What are the advantages of Page Table over Segmentation. **1 point**

- Solves external fragmentation.
 Easy process memory growth.
 Smaller page table size over segmentation table.
 Bigger virtual memory size

No, the answer is incorrect.
Score: 0

Accepted Answers:
Easy process memory growth.
Bigger virtual memory size

9) Every address generated by the CPU is divided into two parts. They are? **1 point**

- frame bit & page number
 page number & page offset
 page offset & frame bit
 frame offset & page offset

No, the answer is incorrect.
Score: 0

Accepted Answers:
page number & page offset