EE463

Operating System Lab. King Abdulaziz University

Faculty of Engineering - ECE

# Lab. #8

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**Solution**

**Simulator:** pagetrans.py

## Command: python ./pagetrans.py -a 16k -p 2k -r 128k -s 107

**Solution:**

Virtual Address Trace

|  |  |  |
| --- | --- | --- |
| VA 0x00003a08 (decimal: | 14856) → | **RA 0x00016a08 [VPN= 7]** |
| VA 0x000011f1 (decimal: | 4593) → | **RA 0x0000f1f1 [VPN= 2]** |
| VA 0x0000140f (decimal: | 5135) → | **RA 0x0000f40f [VPN= 2]** |
| VA 0x00000bfc (decimal: | 3068) → | **RA 0x0001f3fc [VPN= 1]** |
| VA 0x000025be (decimal: | 9662) → | **Invalid [VPN= 4]** |

**Simulator:** pagetablesize.py

## Command: python ./pagetablesize.py -v 32 -e 8 -p 2K Solution:

Virtual Address (VA) = [ vvvvvvvvvvvvvvvvvvvvv | 00000000000]

|  |  |  |  |
| --- | --- | --- | --- |
| **VA (bits)** | **VPN (bits)** | **D (bits)** | **pte (byte)** |
| **32** | **21** | **11** | **2048** |

Calculate (Linear Page Table Size) and write the results in the simplest readable form (e.g. byte, KB, MB, GB, and TB)

Solution Steps:

- 2(VPN bits) = 221 = 2,097,152

- Size of every page = 8

- 8 \* 2,097,152 = **16,777,216 B**

## Linear Page Table Size =

KB => 16,777,216 = **16384 KB**

1024

MB => 16384 = **16 MB**

1024