

Operating Systems. Homework 6. Due Date 27/03/2018

1- Consider a simple paging system with the following parameters: 2^{34} bytes of physical memory; page size of 2^8 bytes; 2^{20} pages of logical address space.

- a. How many bits are in a logical address?
- b. How many bytes in a frame?
- c. How many bits in the physical address specify the frame?
- d. How many entries in the page table?
- e. How many bits in each page table entry?
- f. How many bytes require for keeping the entire page table?

2- Write the binary translation of the logical address 0001010010111011 under the following hypothetical memory management schemes, and explain your answer:

- A. a paging system with a 512 byte page size, where in the page table the value of index i is $i+8$. (the value of index 0 is 8, the value of index 1 is 9 and so on)
- B. a segmentation system with a 1KB maximum segment size, using a segment table in which the base of segment i is $2048*i$. (for example the base of segment 2 is 4096)