

7trans-lookaside-buffer-lab

‘CST 334 (Operating Systems)
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Lab: Translation Lookaside Buffers (TLBs)

We will roughly follow the questions at the end of OSTEP chapter 19. The goal is to write a C program to time array accesses.

1. Copy and compile the file tlb.c that can be found at:

/home/CLASSES/brunsglenn/cst334/labs/TLB/tlb.c

(use -pthread when you compile with gcc). Compile on mlc104. Read the beginning of the Homework section in OSTEP Chapter 19, and the code itself, to make sure you understand what the code is doing.

2. Run the code, trying different values for the two command-line parameters.
3. Following question 3 in OSTEP, write bash code to run the program repeatedly with different values for the number of pages. Use a bash for loop.
4. What do your results tell you about the size of the TLB on mlc104?
5. Do you know any method to plot your results as shown in Figure 19.5 of OSTEP?
6. If you have time, try to address questions 5 and 6 in OSTEP. For 5, look into system call ‘pthread_set_affinity’.

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