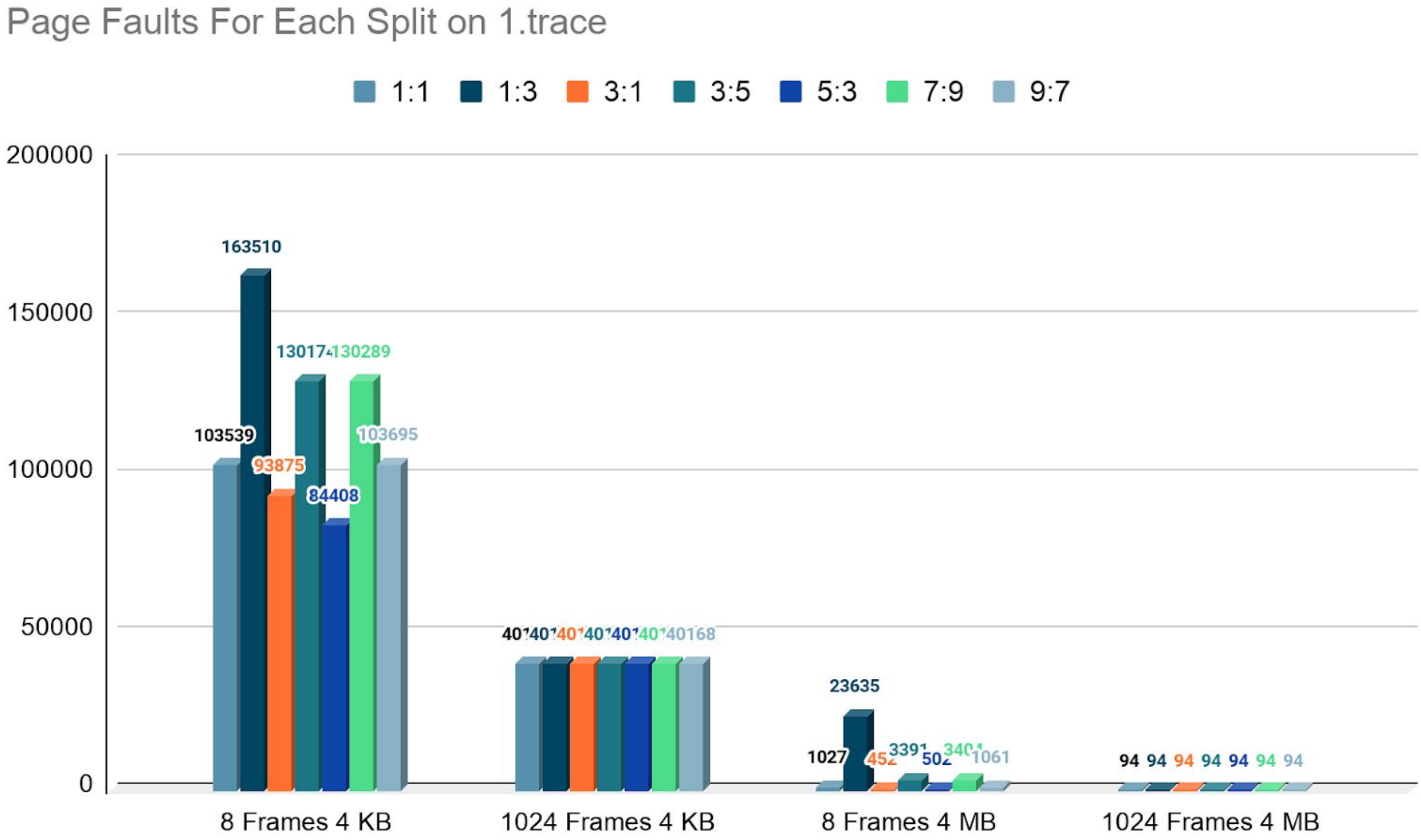
Page Faults For Each Split on 1.trace
1:1
1:3
3:1
3:5
5:3
7:9
9:7
200000
150000
100000
50000
0
163510
130174
130289
103539
93875
84408
103695
40140140140140140140168
23635
1027
452
3391
502
3404
1061
94 94 94 94 94 94 94
8 Frames 4 KB
1024 Frames 4 KB
8 Frames 4 MB
1024 Frames 4 MB

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CS 1550

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15 November 2020

Project 3 Virtual Memory Simulator

For the virtual memory simulator running second chance, the lowest amount of page faults occurs when the page size is large (4MB) and the amount of frames is large (1024 frames). This is because the addresses stay in the process for longer so they are often reused and not evicted. The highest rate of page faults occurs when the page size is small (4KB) and the amount of frames is small (8 frames). This is because there is less of a chance for an address to be reused since the frames are so small. From the graph, it appears that making the page size larger has a bigger effect than increasing the frames (when we went from 8 frames, 4KB to 8 frames, 4MB there was a bigger drop in page faults than when we went from 8 frames, 4KB to 1024 frames, 4 KB).

Overall, it appears that having fewer frames increases the rate of page faults because there is less choice of replacement. Bigger pages will mean a smaller page table, less overhead in reading/writing, and less page faults. However, with bigger pages there will be more internal fragmentation and worse locality of reference which is the tradeoff between smaller and bigger pages.