

Problem 1: Y86

1. [1] 0x006 [2] 2063FF0F [3] 78563412
[4] irmovl array,%edx [5] 7362000000 [6] popl %ebp
2. [1] 0x12345678 [2] 0xFFFFFFFF [3] 0x20 [4] 0x0
[5] 0x12345678 [6] 0x100 [7] 0xFC

Problem 2: Cache

1. [1] 2048 [2] 23 [3] 4 [4] 5
2. [1] 11 [2] Y [3] 11 [4] N
[5] 10 [6] Y [7] 11 [8] Y
[9] 10 [10] Y [11] 10 [12] N
[13] 66.67% (2/3)

3. 1) $(1+8+8) * 3 = 51$

2) $[(1 + 1) + 1 + 1] / 51 = 7.84\% (4/51)$

3) Scheme B

Reason: The four rows of the array are in set 8, 9, 10, 11 respectively, so increasing the number of sets is useless. After doubling the block size, the miss rate is $(1 + 1) / 51 = 3.92\%$.

Each row of the array only occupies one cache line in a set, so increasing the number of ways is useless.