

Virtual Memory

1KB blocks (2^{10})

8 Bytes per block (2^3)

Encoding

(10 bits of page 3 bits offset)

13 bits Total

Starting Virtual Address

0x12DB

89 1
00100111011011
page offset

Physical Memory
512 blocks

Virtual Memory

1KB blocks (2^{10})

8 Bytes per block (2^3)

Encoding

(10 bits of page 3 bits offset)
13 bits Total

Starting Virtual Address

0x12DB

Translate To binary

000100111011011
page offset

Translate To binary

00111011

Virtual Table

Page Frame

27B 0D1

0000

Use physical Mem specifications per encoding

Go To Virtual Table

To Find physical Frame

0x2 ≠ 3

Translate To binary, add offset

000011010001011

Physical Memory

512 blocks

128 blocks

9 bytes per block

4-Way Set Associate

Virtual Memory

1KB blocks (2^{10})

8 Bytes per block (2^3)

Encoding

(10 bits of page 3 bits offset)
13 bits Total

Starting Virtual Address

0x12DB

0x0244

Translate To binary

000100111011011
page offset

Translate To binary

00111011

Virtual Table

Page Frame

27B 0D1

0000

Use physical Mem specifications per encoding

Go To Virtual Table

To Find physical Frame

0x2 ≠ 3

Translate To binary, add offset

000011010001011

Remaining bits are per set

given a set how many bits I need to find a specific block

5 bits Set 2 bits block 3 bits offset

Remaining bits are per set

given a block how many bits I need to find a specific byte

5 bits Set 2 bits block 3 bits offset

Starting Virtual Address

0x12DB

0x0244

Translate To binary

000100111011011
page offset

Translate To binary

00111011

Cache memory

128 blocks

9 bytes per block

4-Way Set Associate

Encoding

(10 bits of page 3 bits offset)
13 bits Total

Starting Virtual Address

0x12DB

0x0244

Physical Memory

512 blocks

128 blocks

9 bytes per block

4-Way Set Associate

Encoding

(10 bits of page 3 bits offset)
13 bits Total

Starting Virtual Address

0x12DB

0x0244

Virtual Memory

1KB blocks (2^{10})

8 Bytes per block (2^3)

Encoding

(10 bits of page 3 bits offset)
13 bits Total

Starting Virtual Address

0x12DB

0x0244

Cache memory

128 blocks

9 bytes per block

4-Way Set Associate

Encoding

(10 bits of page 3 bits offset)
13 bits Total

Starting Virtual Address

0x12DB

0x0244

Cache Table

Index (Set)

000 001 010 011

000 001 010 011

000 001 010 011

000 001 010 011

Go To Virtual Table

To Find physical Frame

0x2 ≠ 3

Translate To binary, add offset

000011010001011

Use physical Mem specifications per encoding

Use cache mem spec to get cache encoding

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