Paging

Address Translation Scheme

Address generated by CPU is divided into:

Page number(p): an index into a *page table*

Page offset(d): to be copied into memory

Given logical address space (2^m) and page size (2^n),

$$\text{number of pages} = \frac{2^m}{2^n} = 2^{m-n}$$

Example: addressing to 0010000000000100

$$\underbrace{\overbrace{0\,0\,1\,0}^{m-n=4}\ \overbrace{0\,0\,0\,0\,0\,0\,0\,0\,0\,1\,0\,0}^{n=12}}_{m=16}$$

$$\text{page number} = 0010 = 2, \quad \text{page offset} = 000000000100$$