

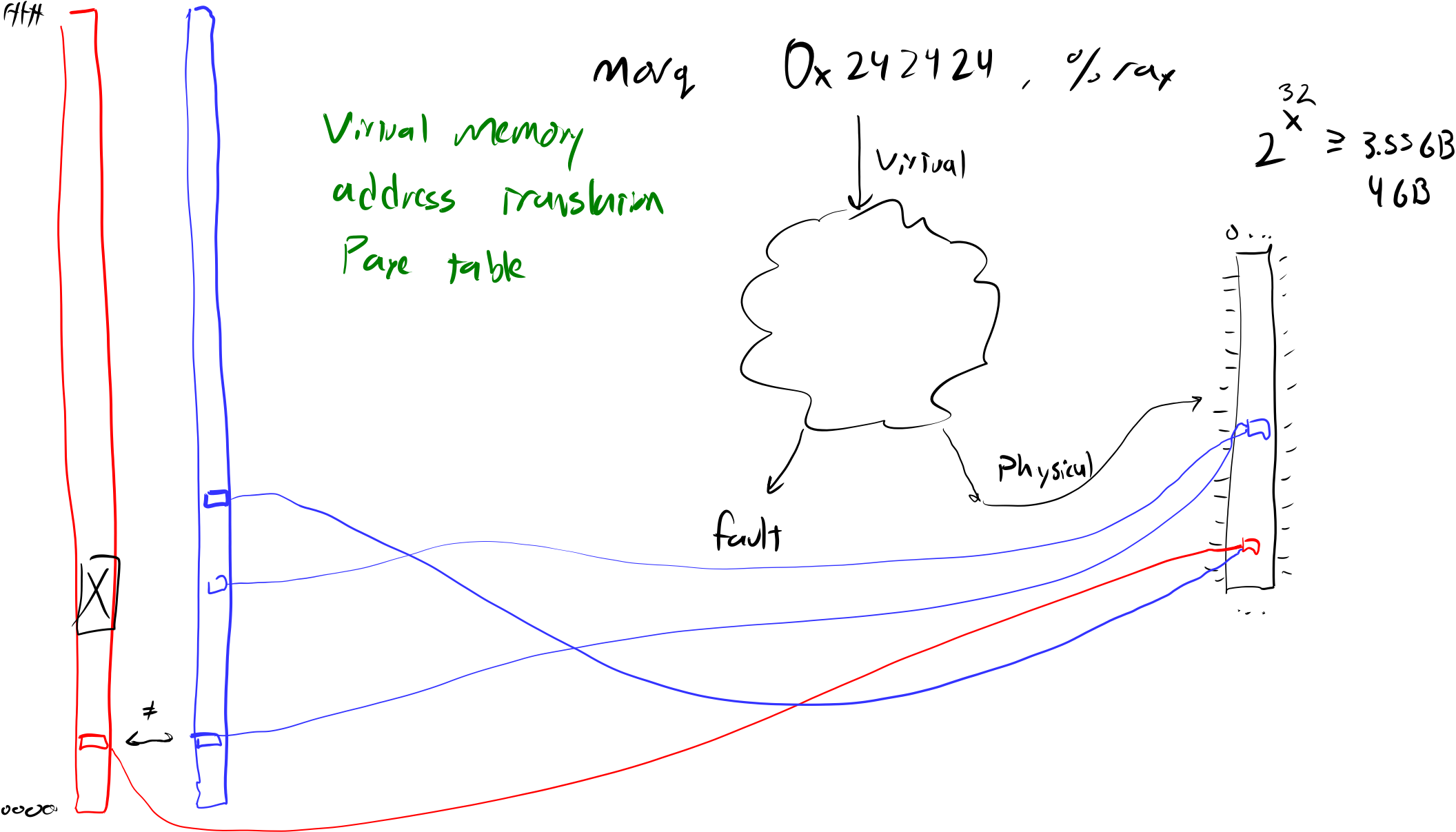
fff

movq

0x242424, %rax

Virtual memory
address translation
Page table

$2^{32} \approx 3.55 \text{ GB}$
46B

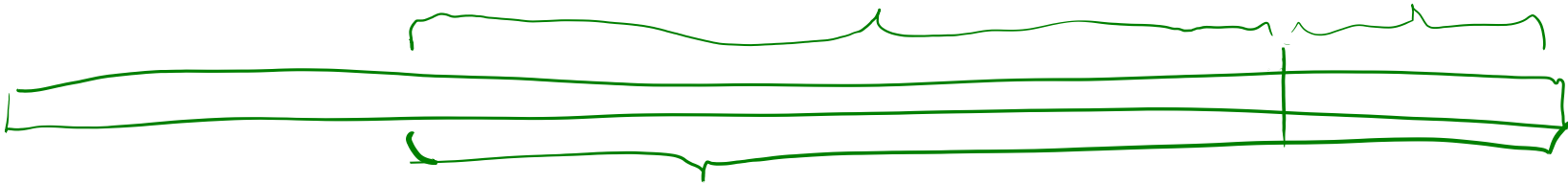


Map \langle VPN, $\overbrace{\text{PTE}}^{\text{PPN, Permissions}}$ \rangle

pte number
36

64G Pages

12 pte offset



VA - 48 of 64 bits

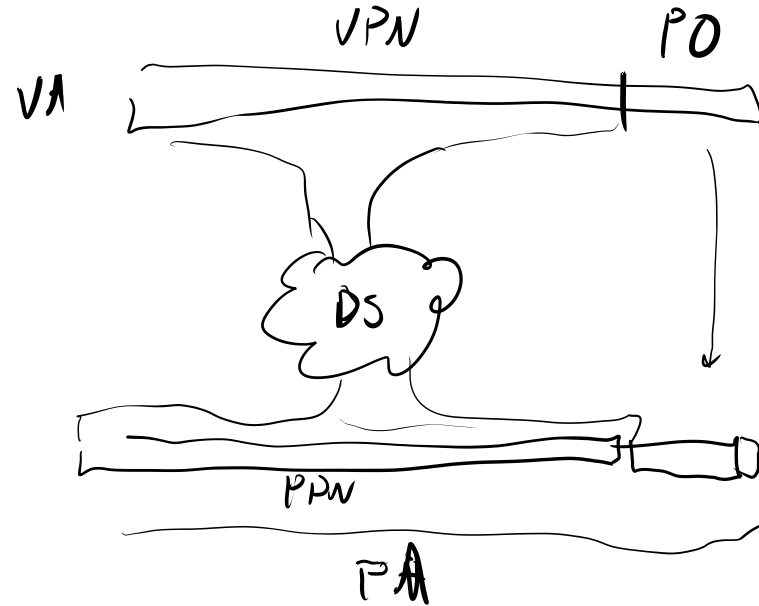
Suppose

0x1234567 - OK



12 bits

256 TB



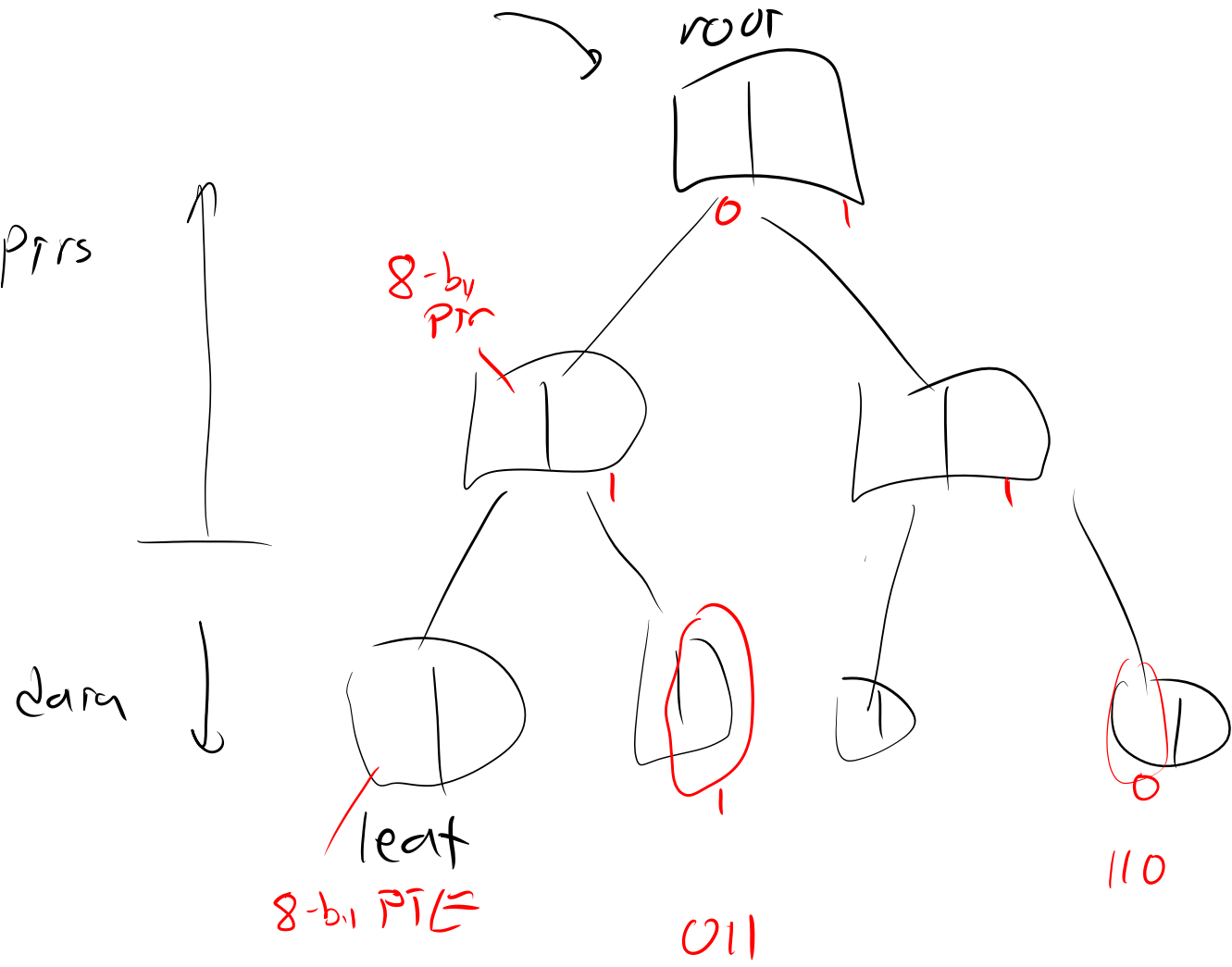
int \rightarrow int

array

40-bit PPN
+ PCIM

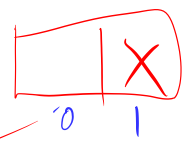
PTE [2^{36}]

$\rightarrow 8 \times 2^{36}$ B $\rightarrow 2^{31}$ B $\rightarrow 512$ GB

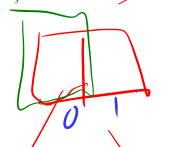
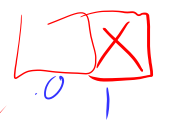


$$|T_{area}| = 2|ar| - 2$$

PT BR
Page table base register



Pointer address



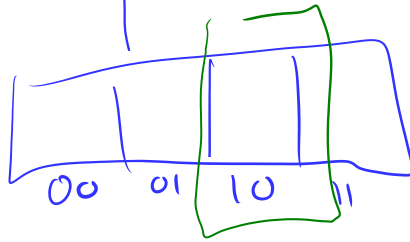
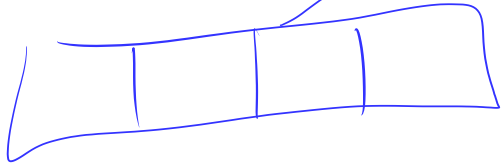
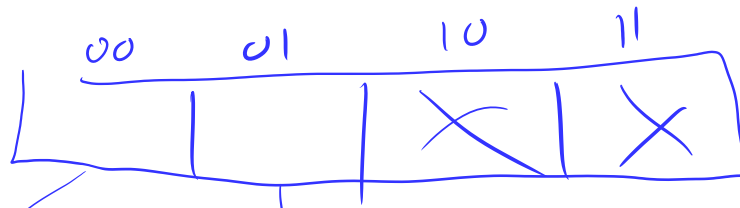
leaf



Page table Entry - PTE

PPN - Physical Page Number
Protection / Permission bits

Page table



0110

