



$$pa; [ ] \quad pt' = \text{new } pa [ 2^{48} ]$$

52 bits  $\rightarrow$  7 bits

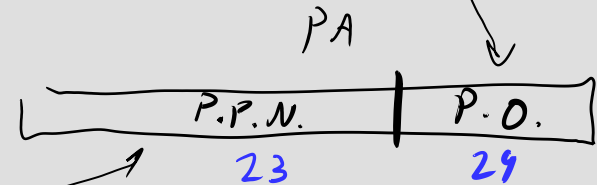
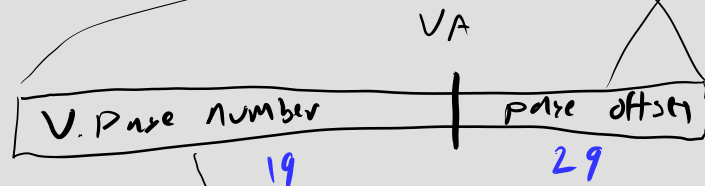
$$\overbrace{2^3}^{87} \cdot 2^{48} = 2^{51} = 2 \text{ PB}$$

$$2^3 \cdot 2^{48} = 2^{51} = 2 \text{ PB}$$



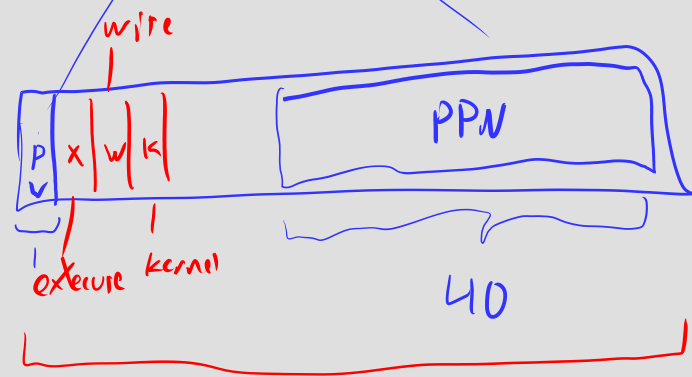
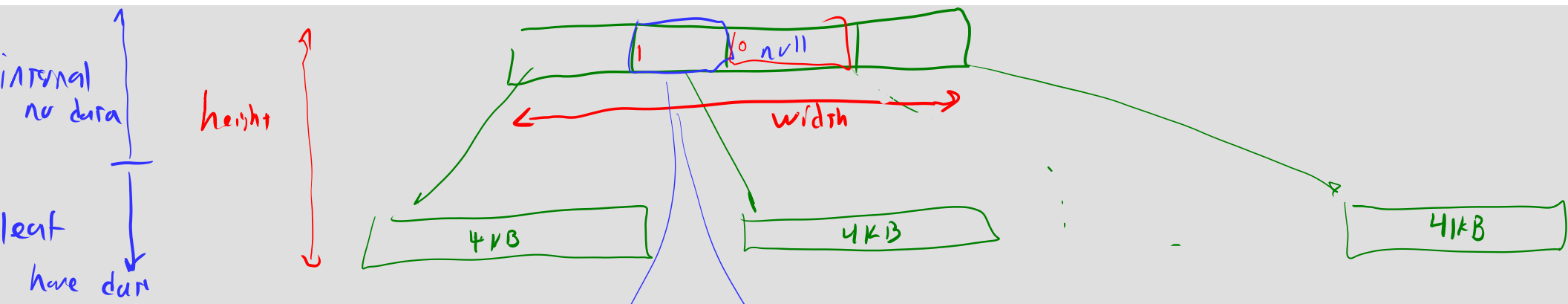
$$2^3 \cdot 2^{36} \rightarrow 2^{39} \rightarrow 512 \text{ GB}$$

$$pa = pt[va]$$

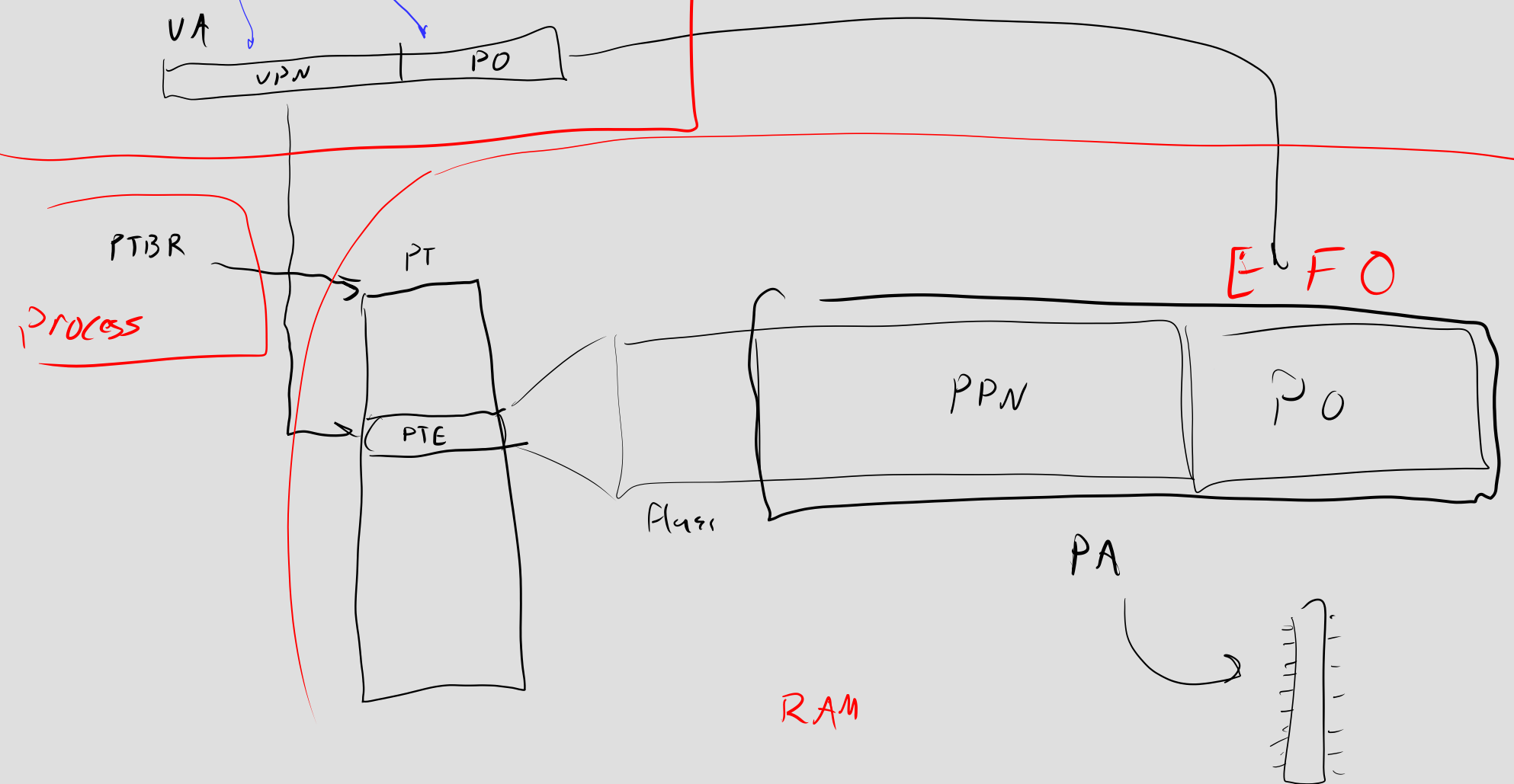


$$ppn [ ] \quad pt'' = \text{new } ppn [ 2^{19} ]$$

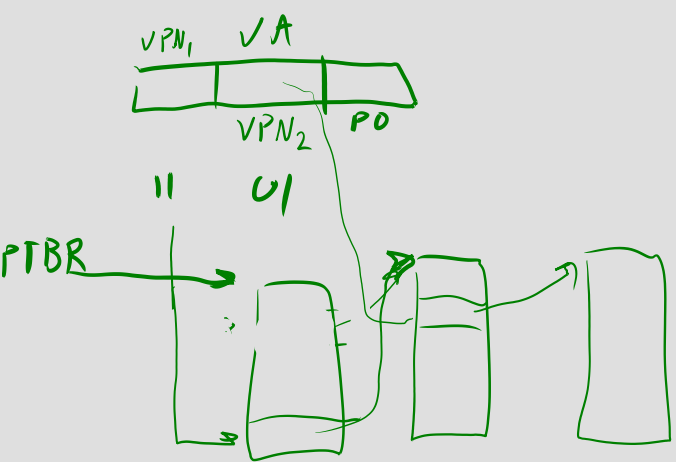
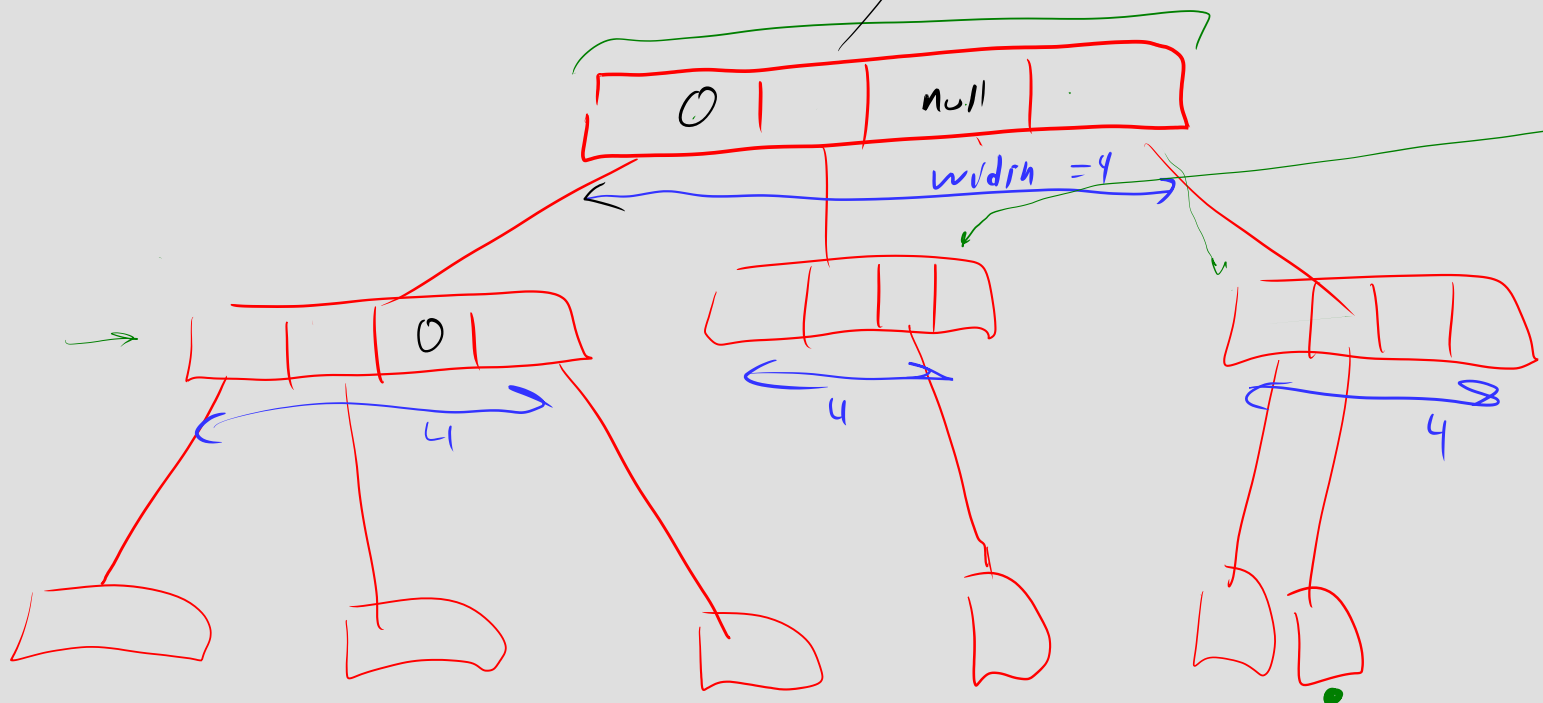
$$\overbrace{2^2}^{4-3} \cdot 2^{19} \rightarrow 2^{21} = 2 \text{ MB}$$

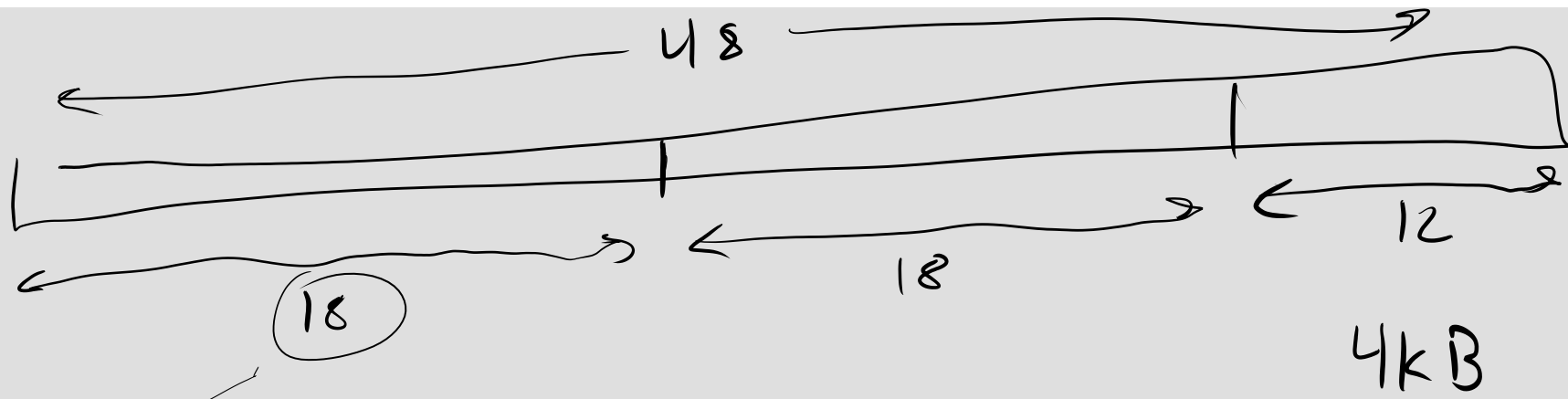


~~0x123456789ABC~~ Code  
EFO



intron  
 no data  
 ↑  
 height  
 ↑  
 level  
 data

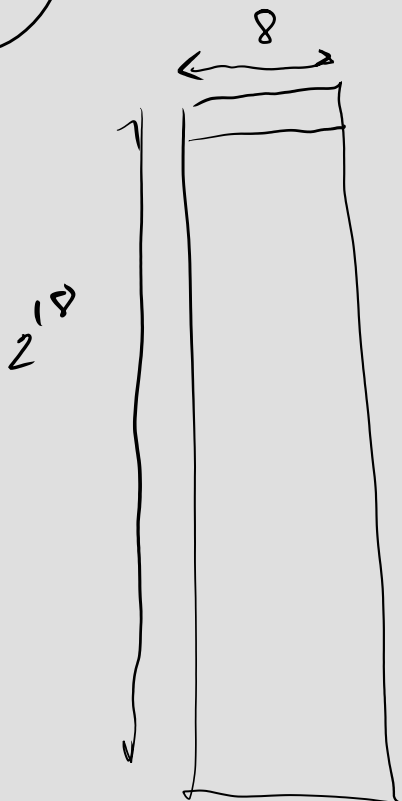


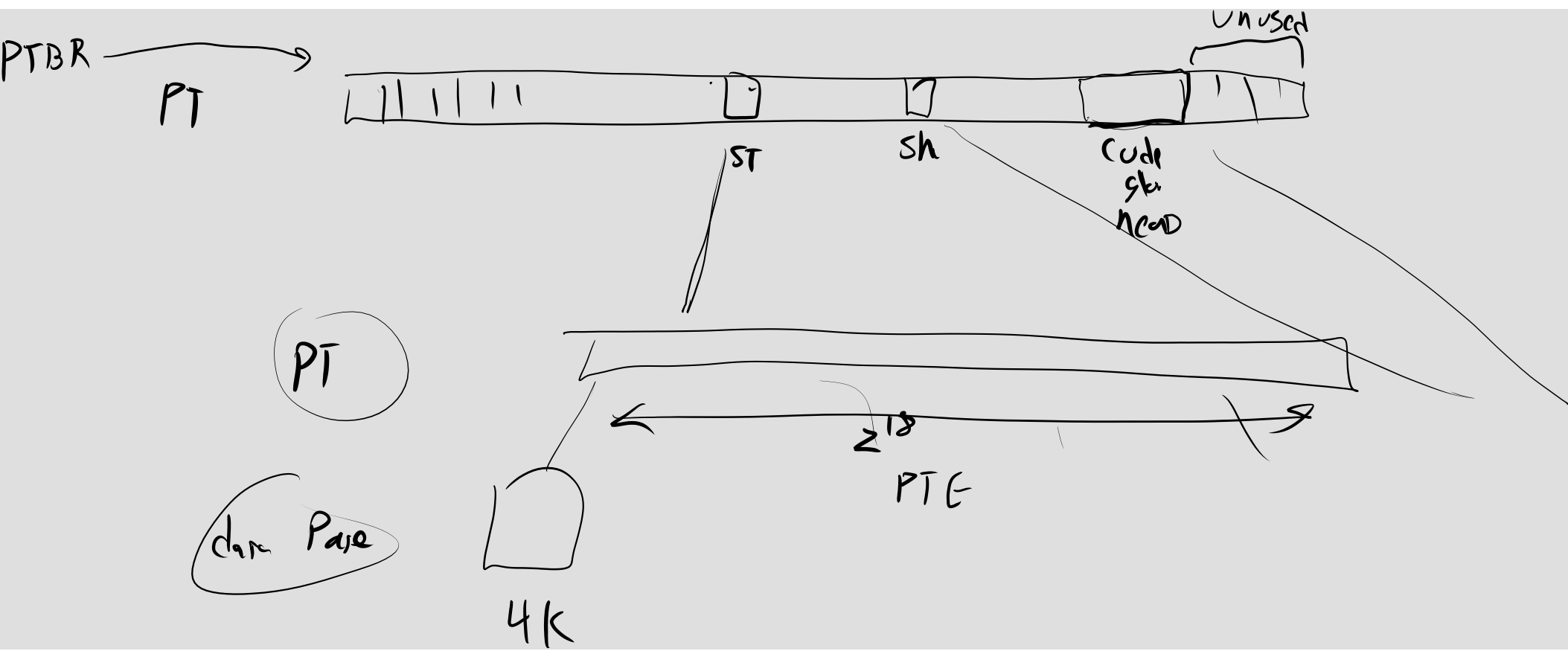


8B PTE

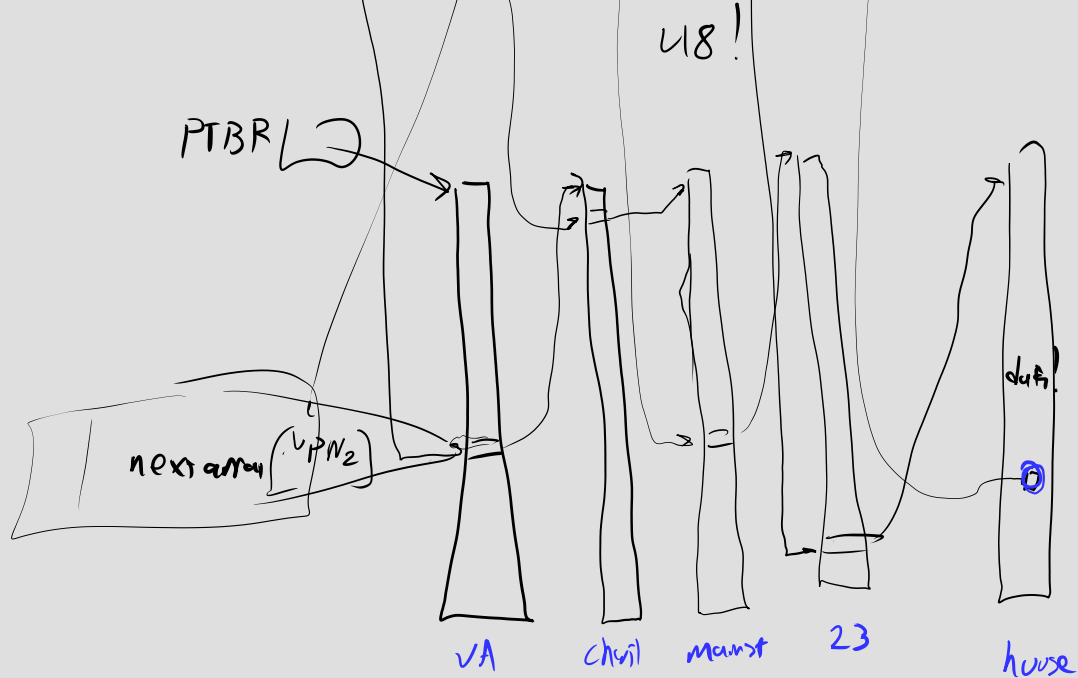
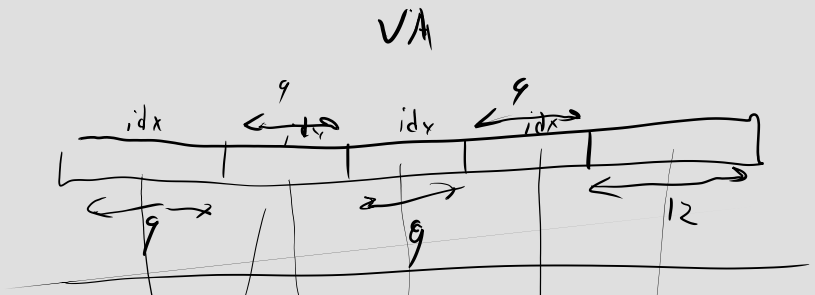
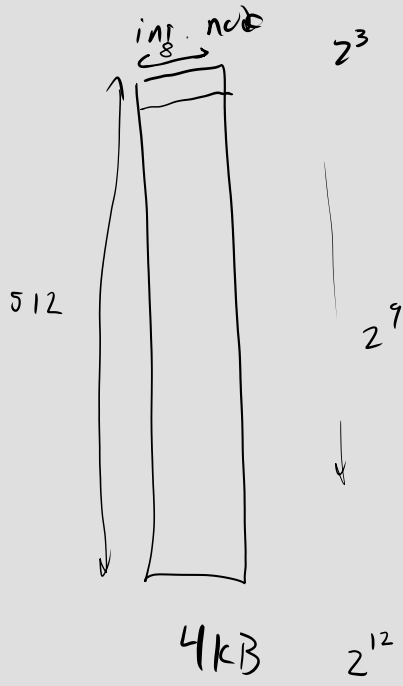
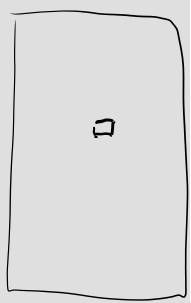
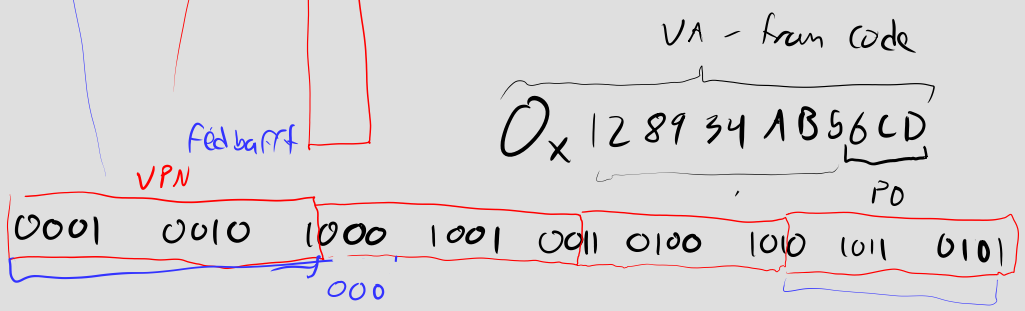
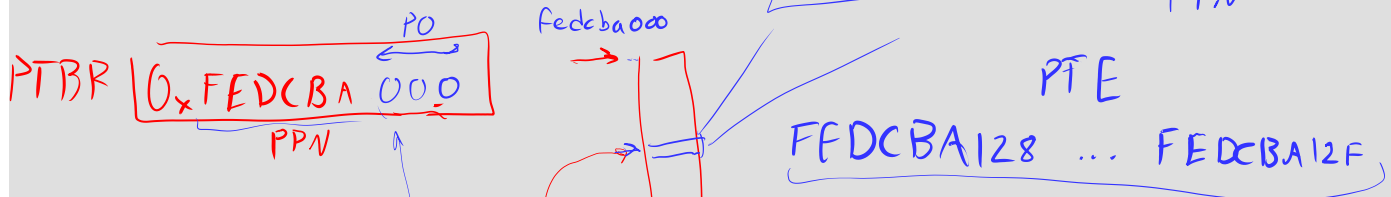
$$\log_2(8) = 3$$

$2^{21}$  B internal node  
 $\rightarrow$  2MB



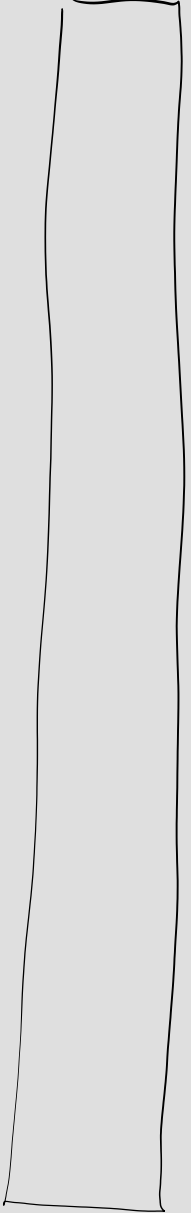




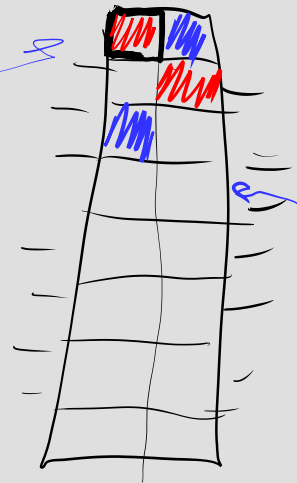


(f)fr

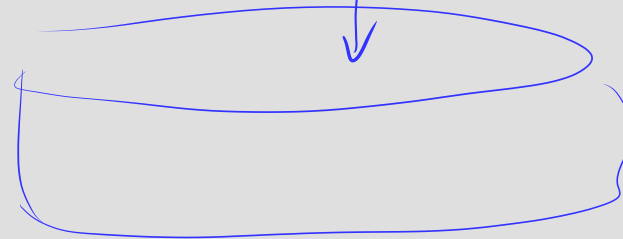
VA sep



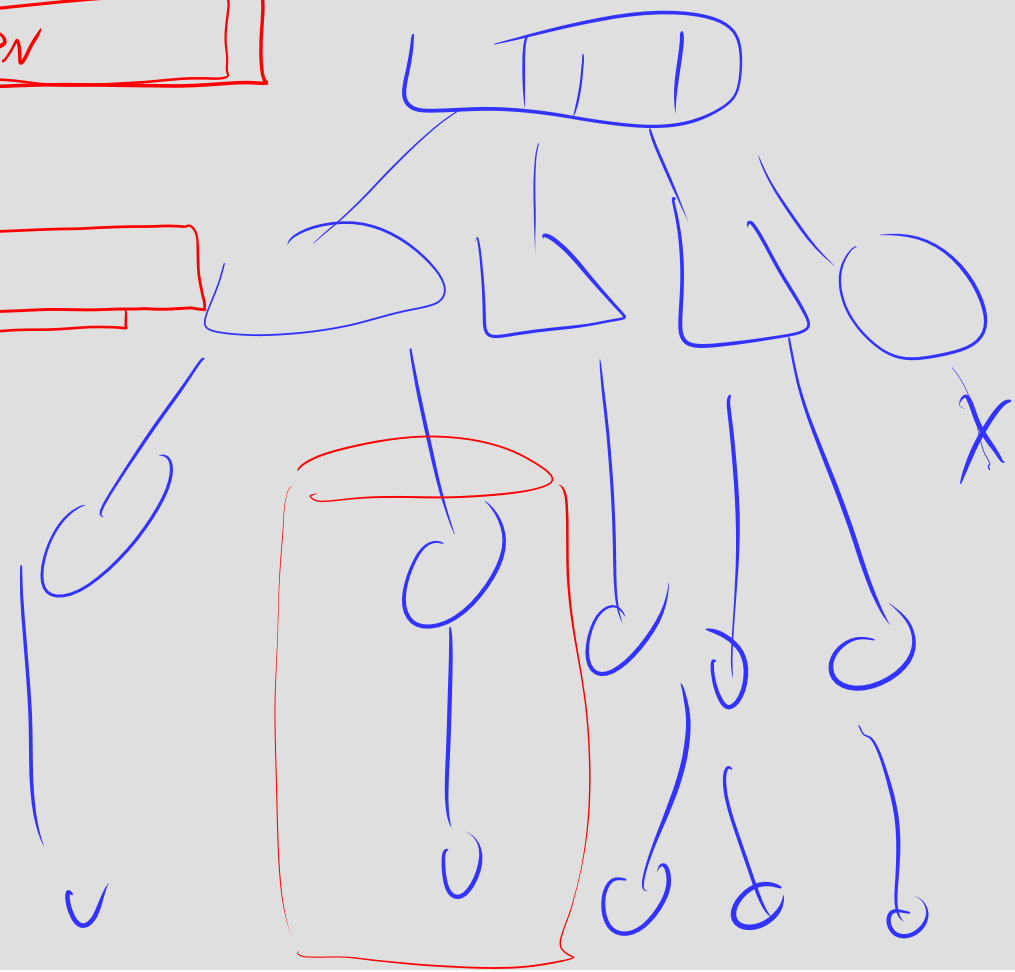
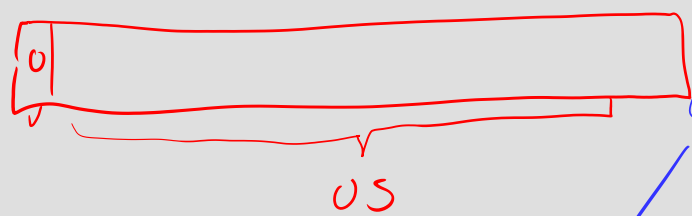
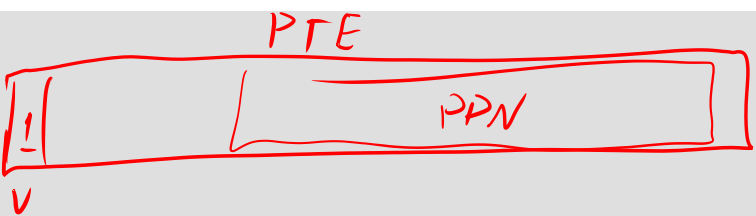
RAM



Swap



000ce



Page fault

Thrash

PTBR [ ] →

