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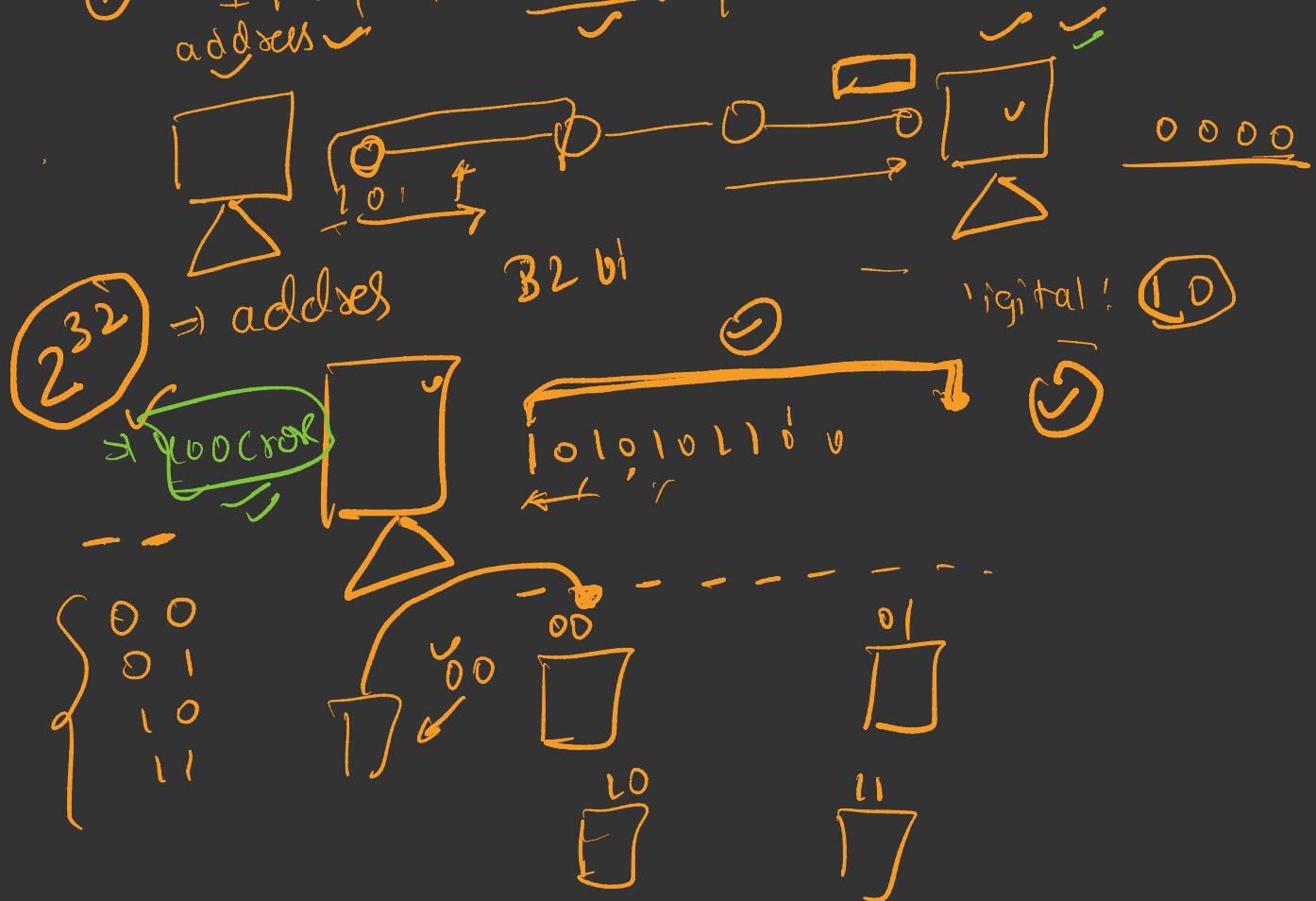
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① IPv4 : 32 bit } standard  
address



IPV6: 128 bits ✓

IPV6  $\Downarrow$   
 $2^{128}$  ✓

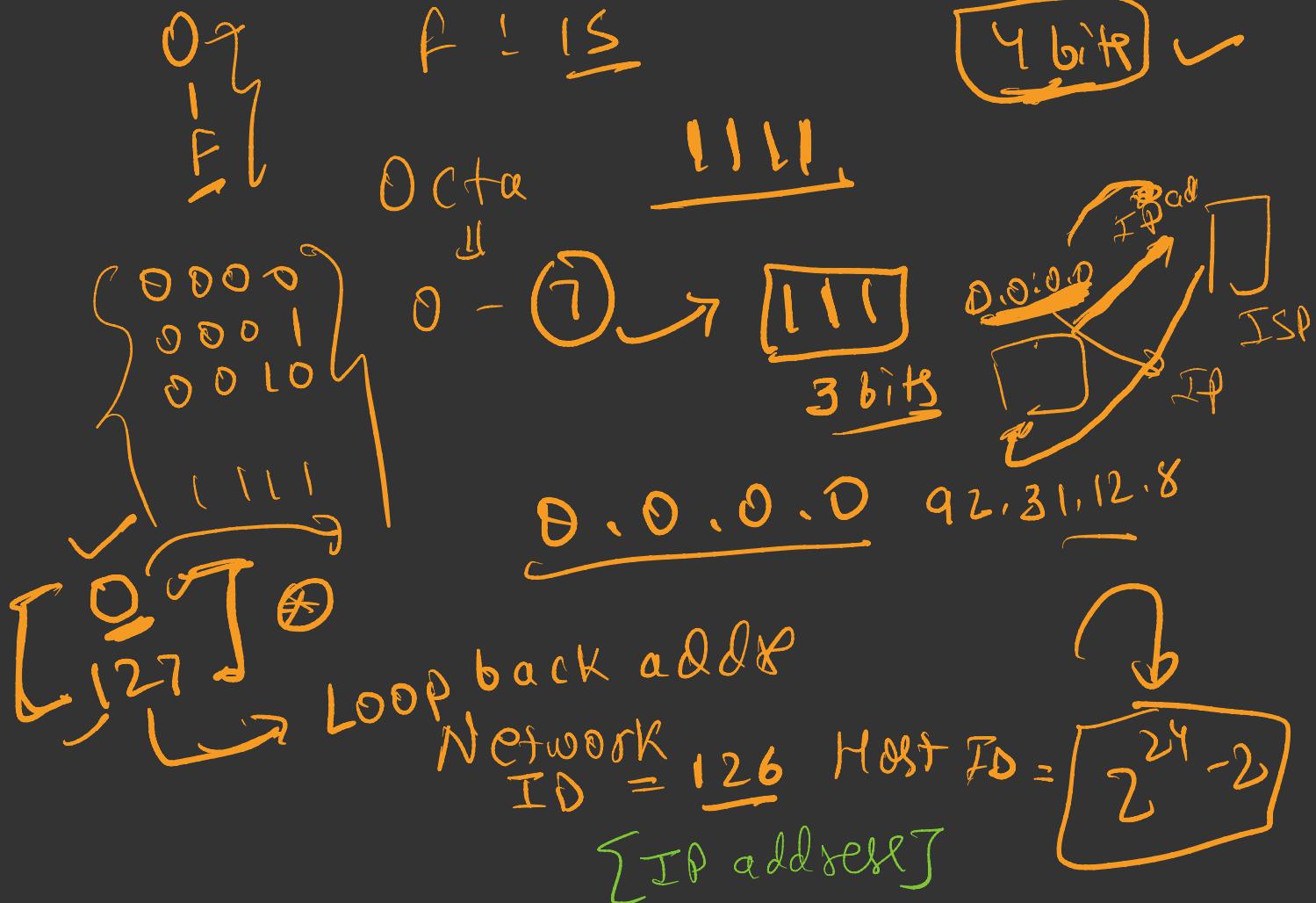
Hexdecimal = 0-F

32  
 $\downarrow$   
64 ✓  
128 bits 8

0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000  
FFFF : FFFF

$$16 \times 8 = 128 \text{ bits}$$

01011101010 - - - 1



Class A:  $\{1-126\} \cdot \cdot \cdot \cdot \cdot$  78 Hosts  
 Class B:  $128-191 \cdot \cdot \cdot \cdot \cdot$  64  
 Class C:  $192-223 \cdot \cdot \cdot \cdot \cdot$  32 Network ID  
 Class D:  $224-239 \cdot \cdot \cdot \cdot \cdot$  16  
 Class E:  $240-255 \cdot \cdot \cdot \cdot \cdot$  16 Binary

Class A:  $\cdot \cdot \cdot \cdot \cdot$   
 ↓  
 0  $\frac{0000000}{1111111}-0$  0  $\frac{1}{2^7=128} - 32/2=16$  32

$2^7 = 128 - 64/2$

Class B : 10 ----- . . .

$$2^6 = \boxed{64}$$

$\left[ \begin{array}{l} 10 \text{ } \underline{0\ 0\ 0\ 0\ 0\ 0} = 128 \\ 10 \text{ } \underline{1\ 1\ 1\ 1\ 1\ 1} = 191 \end{array} \right]$  Class B !

$\left[ \begin{array}{l} \text{---} \\ \text{---} \\ 11110000 = 240 \\ 11111111 = 255 \end{array} \right]$

Class C : 110 ----- . . .

$$2^5 = \boxed{32}$$

$\left[ \begin{array}{l} 110 \text{ } \underline{0\ 0\ 0\ 0\ 0} = 192 \\ 110 \text{ } \underline{1\ 1\ 1\ 1\ 1} = 223 \end{array} \right]$

$$2^4 = \boxed{16}$$

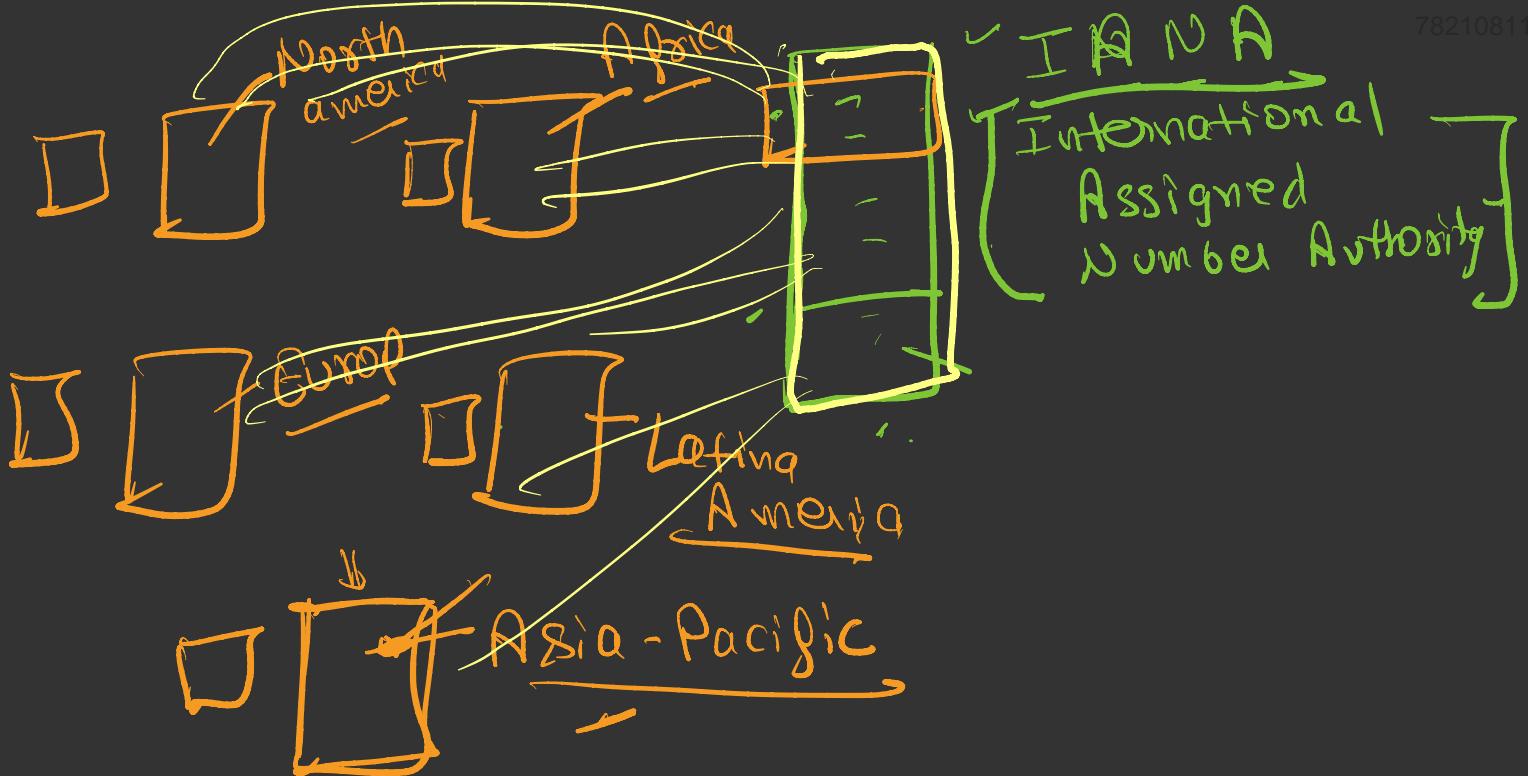
Class D : 1110 ----- . . .

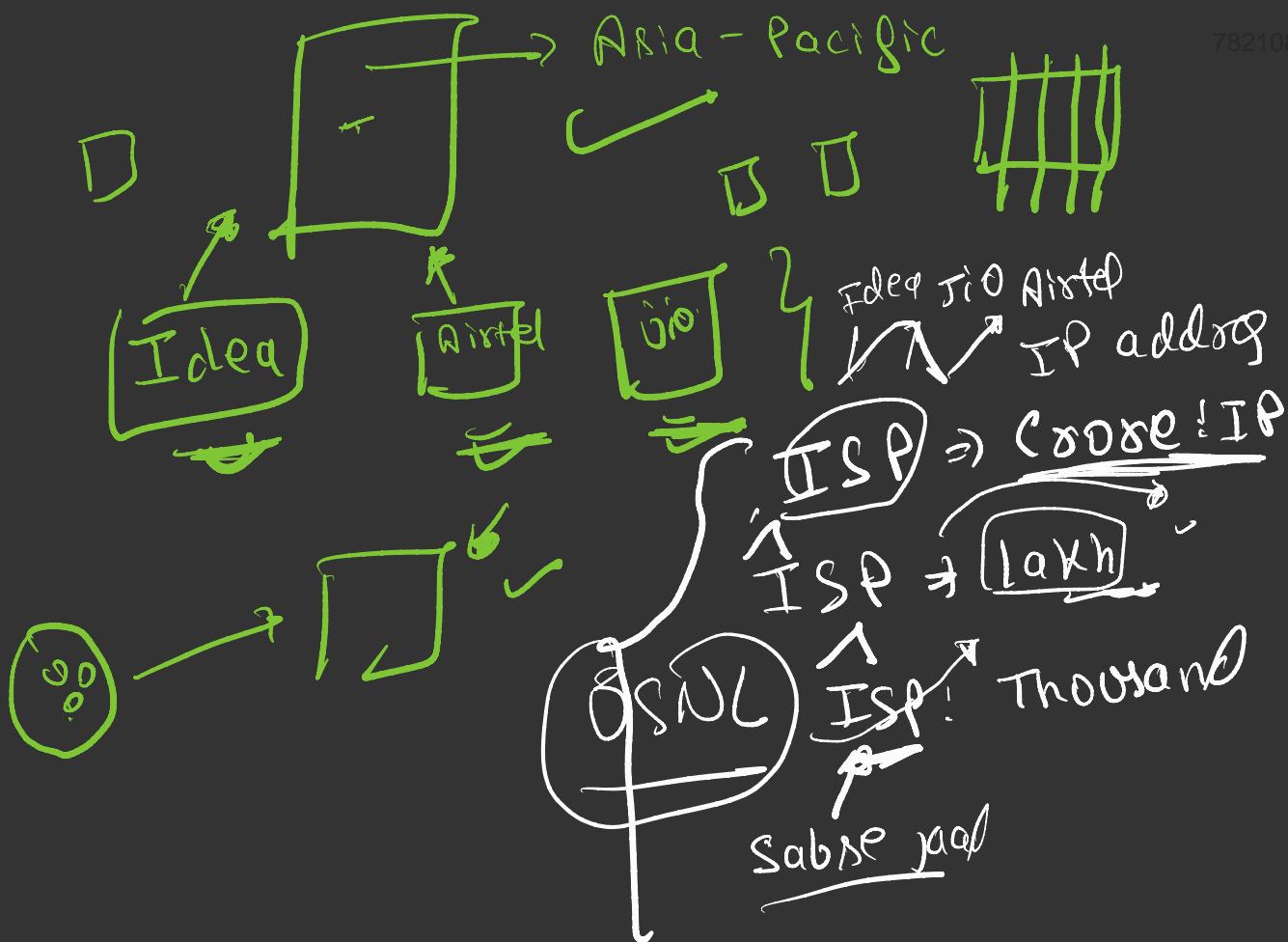
$$1110 \text{ } \underline{0\ 0\ 0\ 0} = 224$$

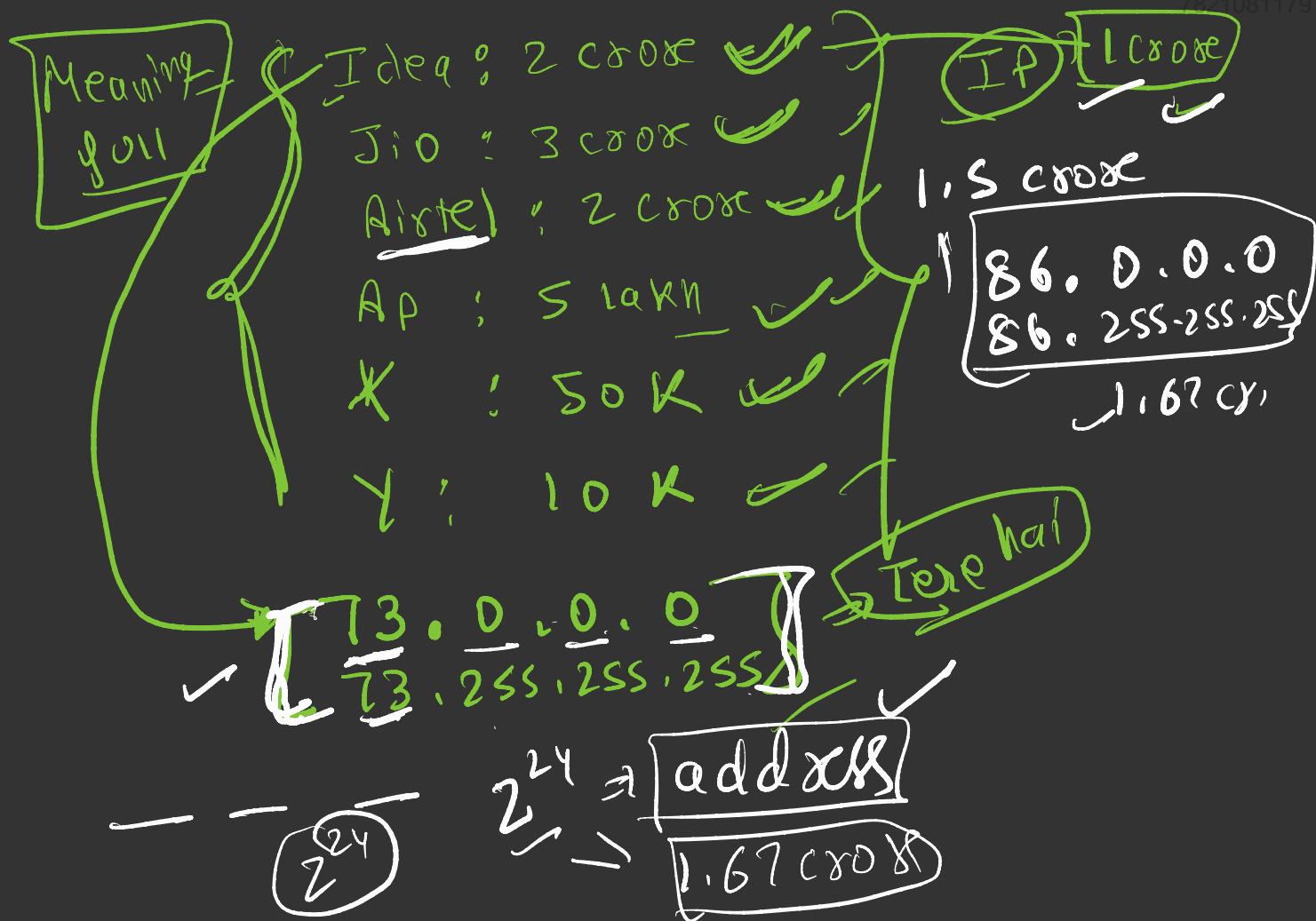
$$1110 \text{ } \underline{1\ 1\ 1\ 1} = 239$$

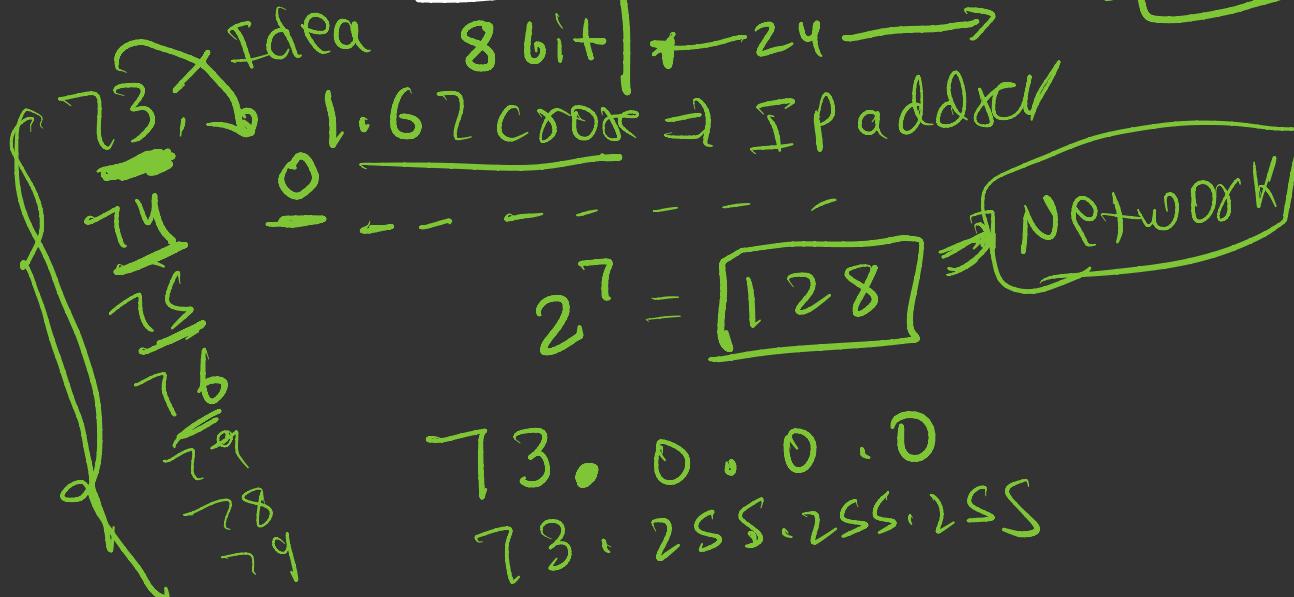
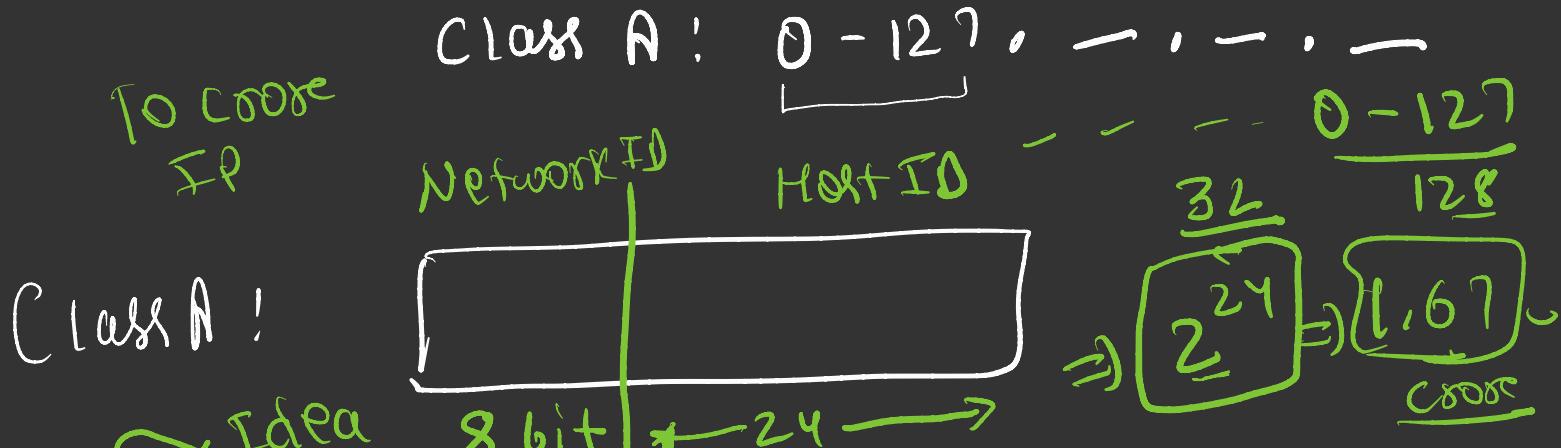
Class A :	0	✓
Class B :	<u>10</u>	✓
Class C :	1 1 0	✓
Class D :	1 1 1 0	✓
Class E :	1 1 1	✓

1 1 0

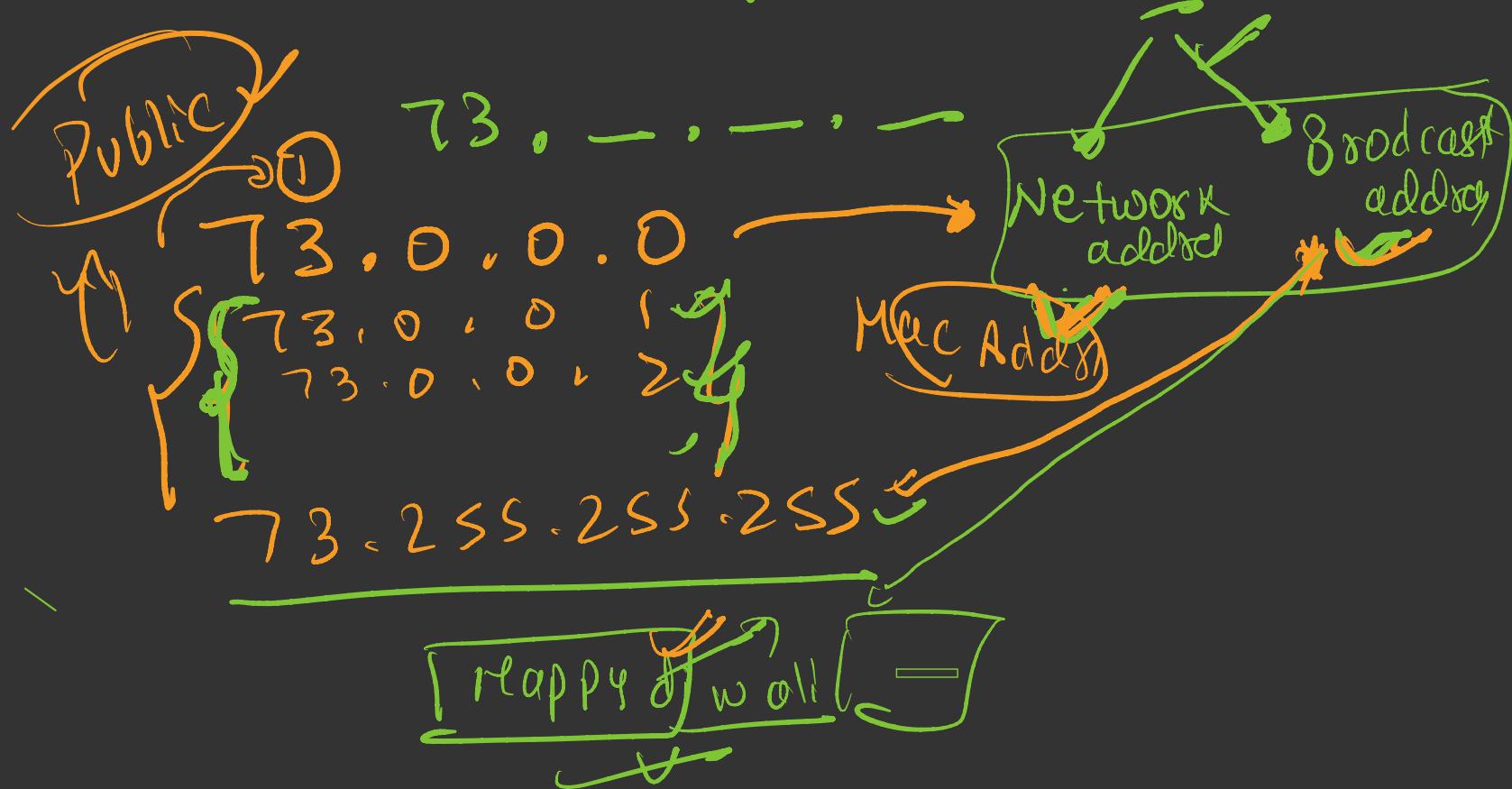




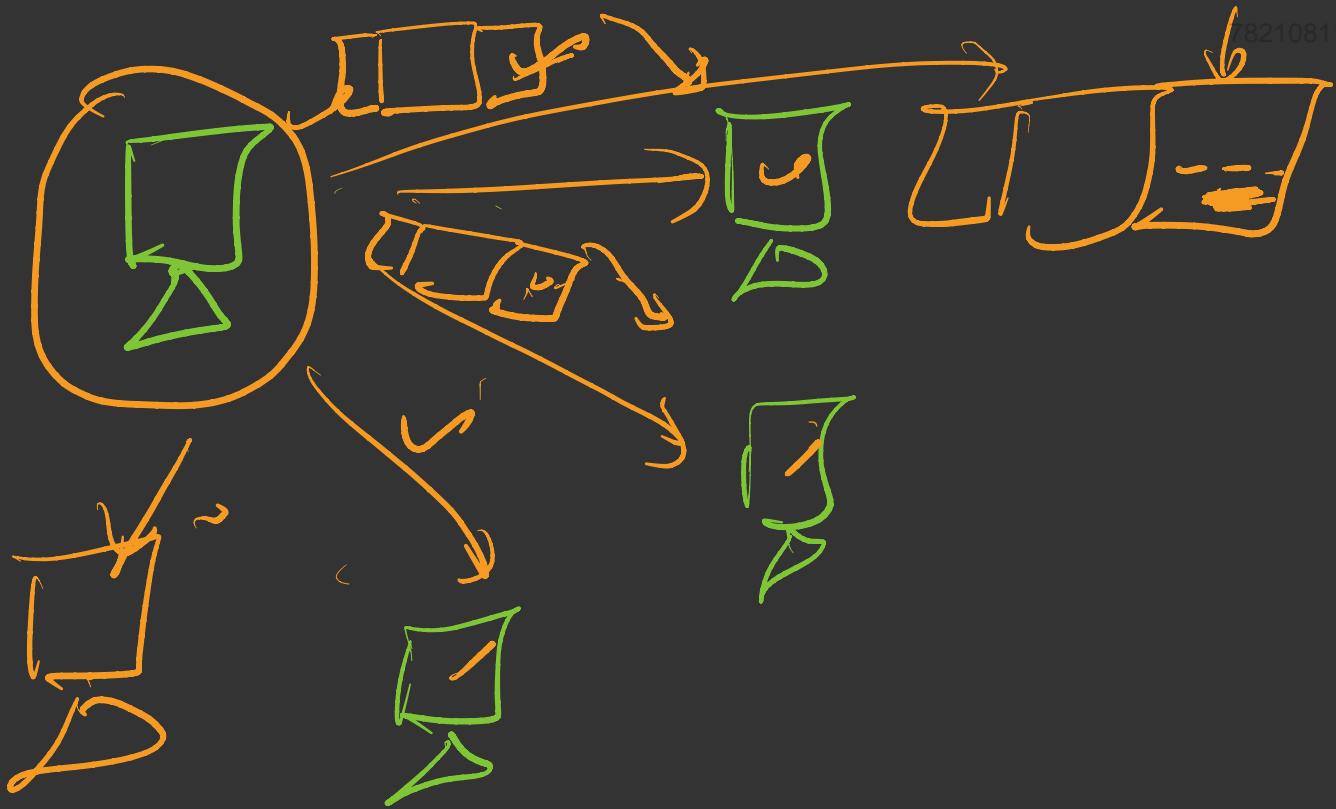


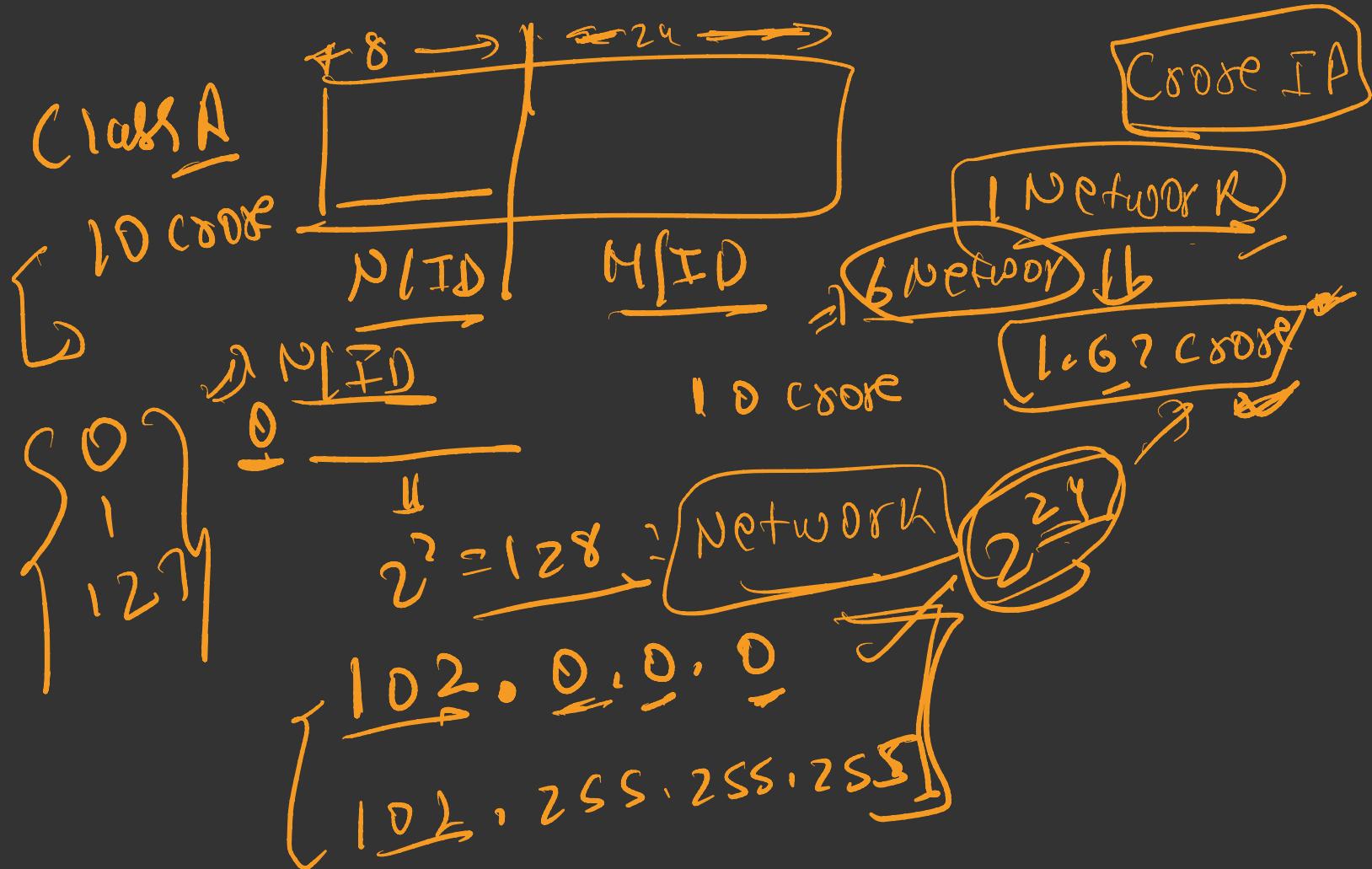


Host ID =  $2^{24} - 2$

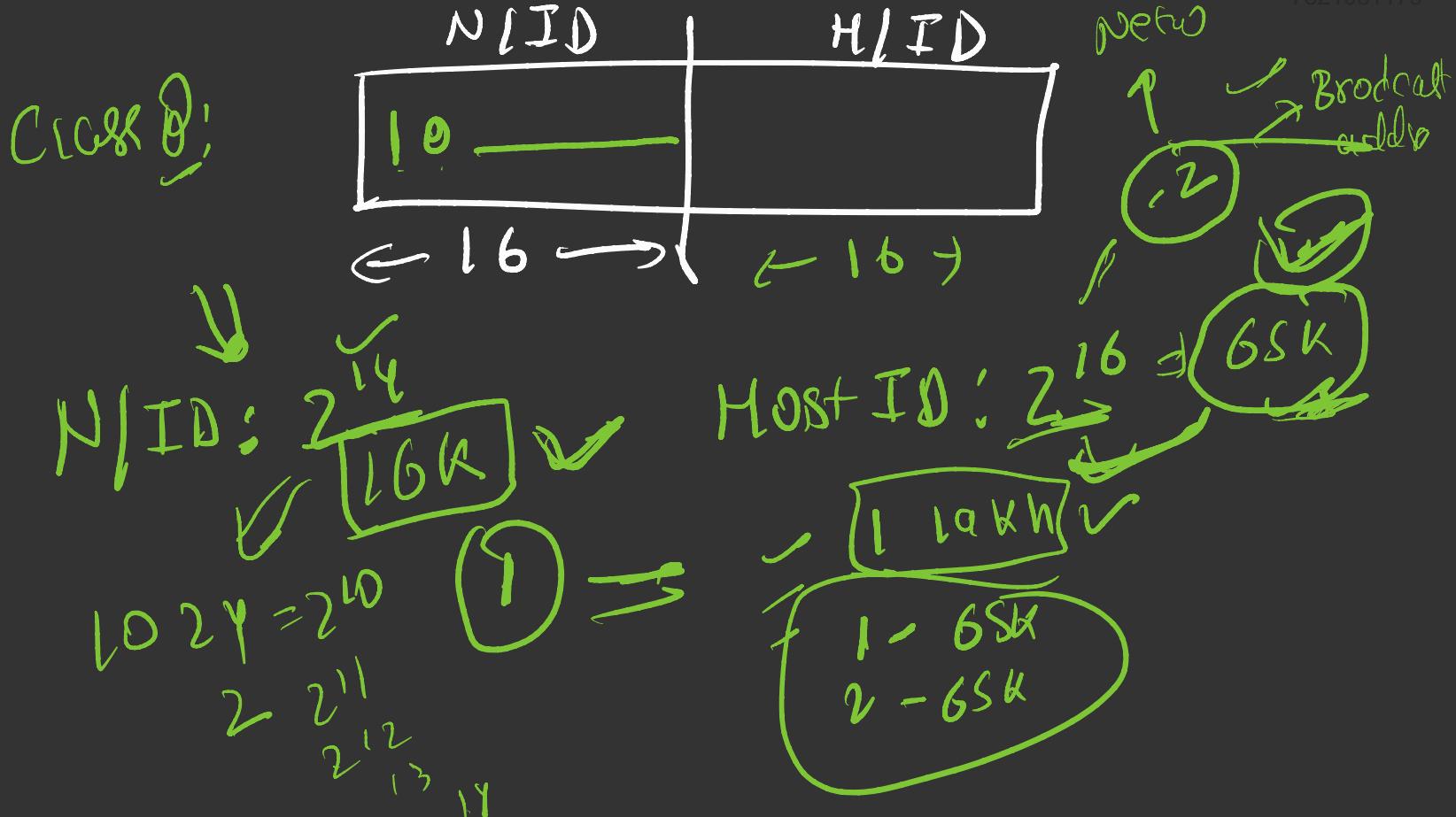


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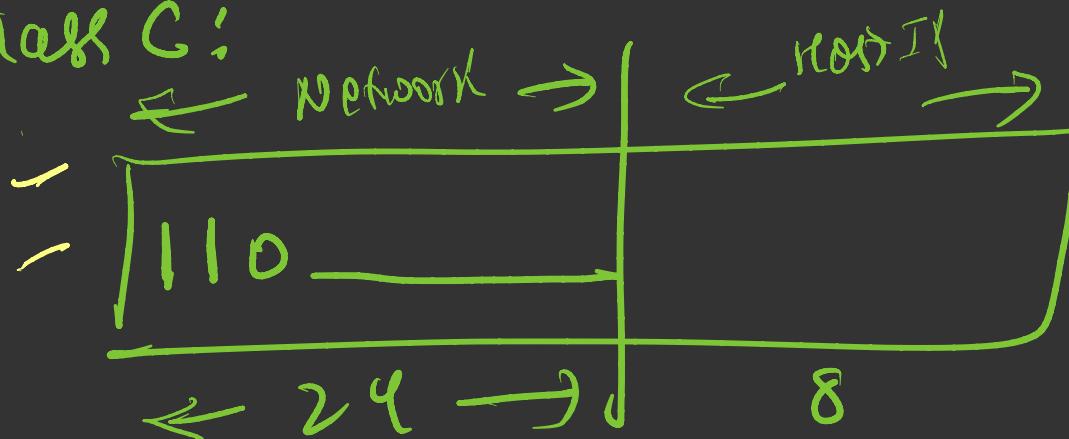




$$\begin{matrix} & \overbrace{1} & \overbrace{-1} & \overbrace{1} \\ & & & & f \\ \left\{ \begin{matrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{matrix} \right. & & \left. \begin{matrix} 0 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{matrix} \right. & \left. \begin{matrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{matrix} \right. \\ \left\{ \begin{matrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{matrix} \right. & & \left. \begin{matrix} 0 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{matrix} \right. & \left. \begin{matrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{matrix} \right. \\ & & & & f \\ & & & & 2^3 = 8 \end{matrix}$$



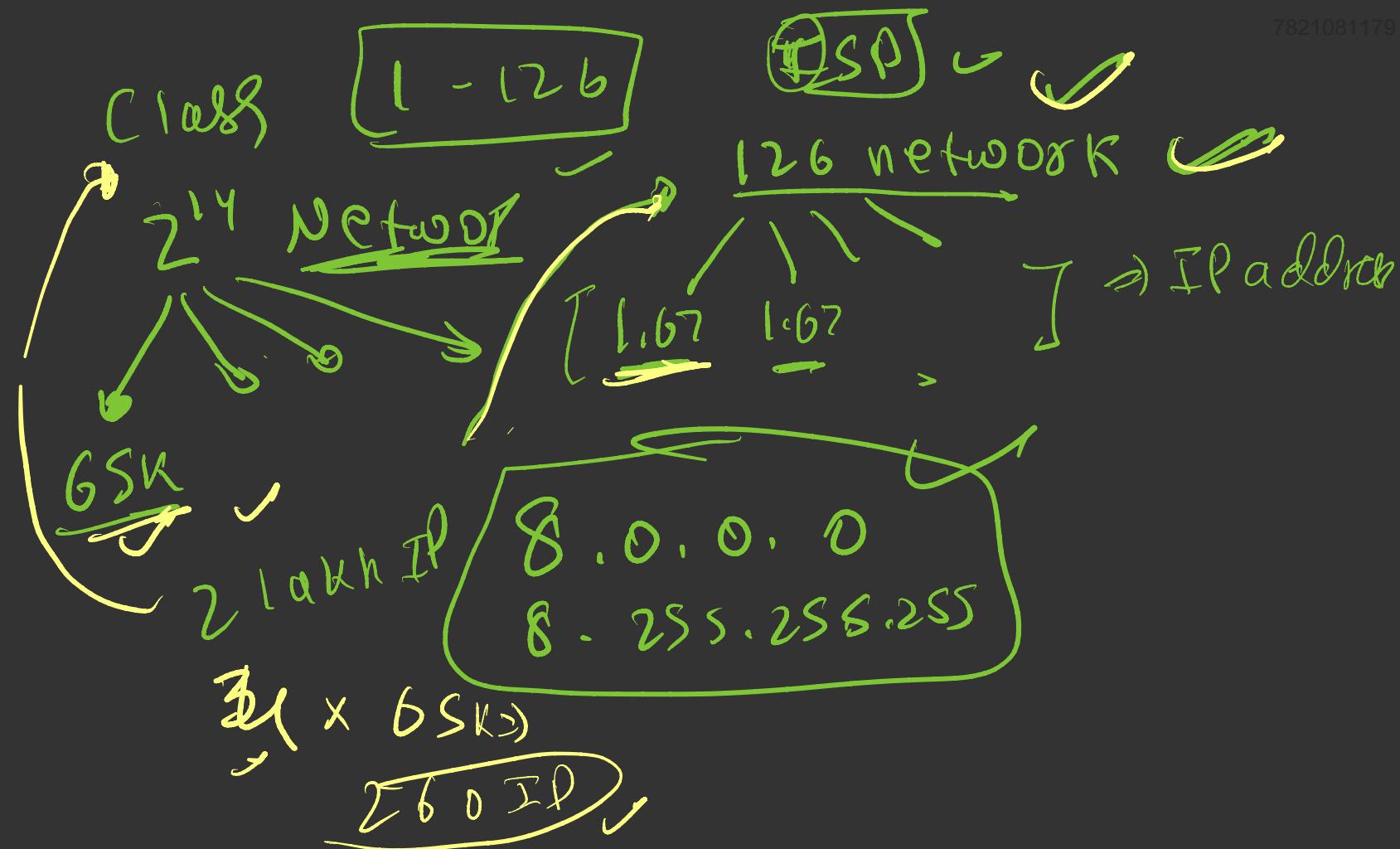
Class C:

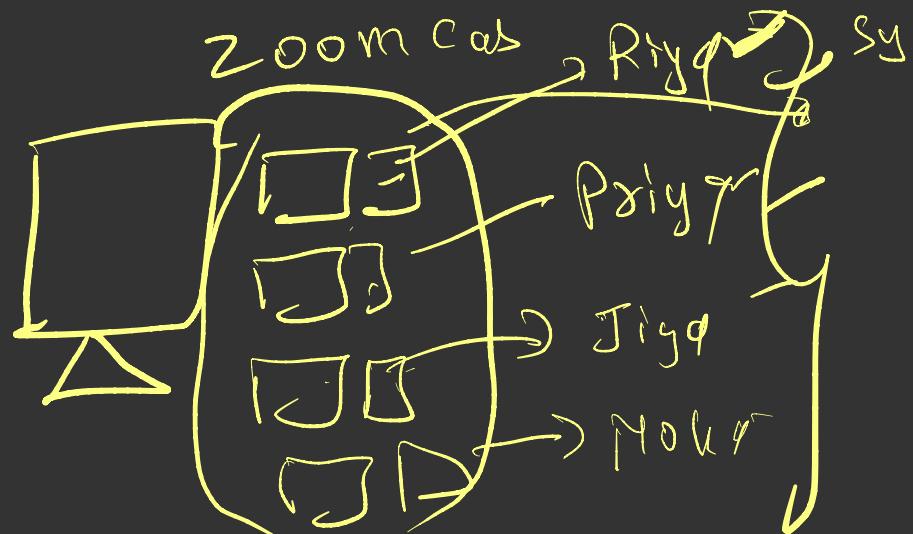
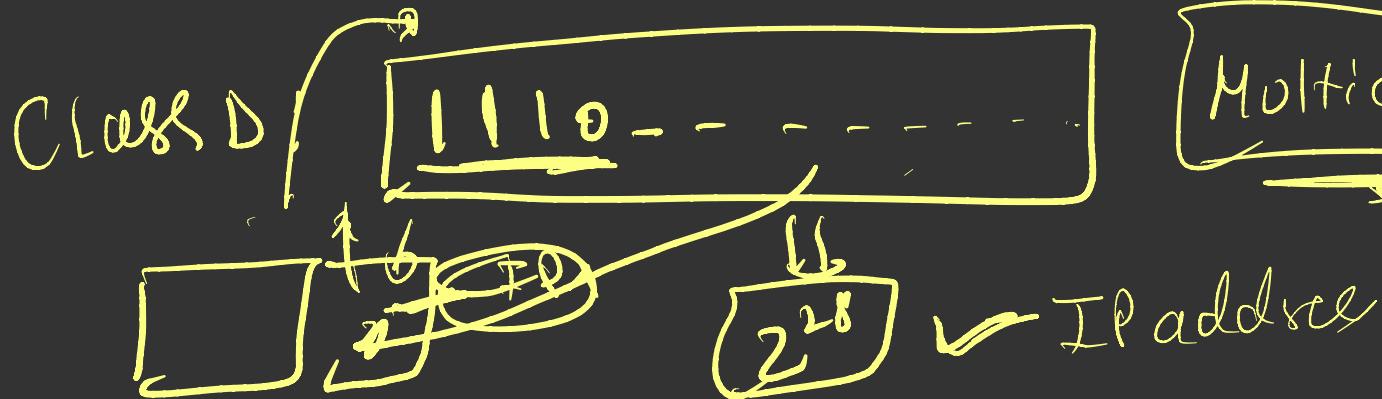


Network:  $2^{24}$

Host:  $2^8 - 2$   
 $= 254$

4 Networks!  
10110111





Class E: [|||| - - - - - ]

[1)  $2^{28} \rightarrow$  Reserve for future use]

