

Floating point.pdf

-4,3984375 $\xrightarrow{\text{little endian}}$ binary \rightarrow hex

Sign bit: 1 (negative)

4,3984375

$$4 \frac{51}{128} = \frac{563}{128}$$

$$\div 2^2$$

$$\frac{563}{128} \div 4 = \frac{563}{512} \quad \text{Exponent } 3 \quad 2+127=129 = 1000\ 0001_2$$

$$\text{Mantissa: } \frac{563}{512} - 1 = \frac{51}{512}$$

Powers of $\frac{1}{2}$, $\frac{256}{512}$, $\frac{128}{512}$, $\frac{64}{512}$, $\frac{32}{512}$, $\frac{16}{512}$, $\frac{8}{512}$, $\frac{4}{512}$, $\frac{2}{512}$, $\frac{1}{512}$
 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$, $\frac{1}{64}$, $\frac{1}{128}$, $\frac{1}{256}$, $\frac{1}{512}$

$$\frac{51}{512} = \frac{32}{512} + \frac{19}{512}, \quad \frac{19}{512} = \frac{16}{512} + \frac{3}{512}, \quad \frac{3}{512} = \frac{2}{512} + \frac{1}{512}, \quad \frac{1}{512} = \frac{1}{512}$$

$$2^{-4}, \quad 1, \quad 2^{-5}, \quad 2^{-8}, \quad 2^{-9}$$

$$0001\ 1001\ 1000\ 0000\ 0000\ 000$$

Binary: 1100 0000 1000 1100 1100 0000 0000 0000 Big endian

Hex: 0x C08CC000 Big endian

Hex: 0x 00C08CC0 Little endian

0x0000a03f \rightarrow big endian hex \rightarrow binary \rightarrow decimal

Big endian hex: 3f a0 00 00

Binary: 0011 1111 1010 0000 0000 0000 0000 0000

+ sign Exponent Mantissa

$$0111\ 1111_2 = 2^7 - 1 = 127, \quad 127 - 127 = 0 \quad \text{0 is exponent}$$

$$\text{Binary: } 0100\ 0000\ 0000\ 0000\ 000 = (.25)_2 \times 2^0$$

$$2^{-2} = \frac{1}{4}$$