

3.125

8-bits

$k=3$

32-bit = 8

64-bit = 11

$$3/2 = 1R1$$

$$1/2 = 0R1$$

$$3 = 11$$

$$0.125 \times 2 = 0.25$$

$$0.25 \times 2 = 0.5$$

$$0.5 \times 2 = 1.0$$

$$0$$

$$0.125 = 001$$

0 1 0 0 1 0 0 1

$$3.125 = 11.001$$



$$1.001 \times 2^0$$

$$1.1001 \times 2^1$$

Mantissa

$$2^{k-1} - 1$$

$$2^{3-1} - 1$$

$$2^2 - 1$$

$$3 = \text{bias}$$

$$3.125 = 01001001$$

$$1+3=4 \Rightarrow$$

$$4/2 = 2R0$$

$$2/2 = 1R0$$

$$1/2 = 1$$

$$4 = 100$$

↑↑↑

$$4 = 4 + e = 0$$