

2011-03-07 作業解答

1. 在 IEEE754 格式下如何表示零，無窮大等特別數；以 double 為例，最小的正數為何。
(註明出處)

Under IEEE754 format, the binary digits are designated into one sign bit followed by q exponent bits and p significant bits. A 0/1-valued sign bit represents a positive/negative number. Zeros are signed with all the following $q+p$ bits being 0s. Infinities are also signed followed by q 1s and p 0s.

The smallest positive number is denormal and given by all 0s except for the last bit. For a 64-bit double, this number represents the value of $2^{(-1074)}$, which is about $4.94 \cdot 10^{(-324)}$.

This information comes from wikipedia.com .

2. 以太網路(Ethernet)的協定中，資料傳輸的衝突要如何解決。(註明出處)

On a Ethernet, all hosts are connected to the same physical media. Therefore, there can be conflicts or collisions when two or more hosts are attempting to transmit data at the same time. When a collision is detected by a host, the host sends a jam signal to the media to make sure the collision is detected by all the sending hosts. Then, the host will retransmit the data package after waiting for a time period of $r \cdot dt$, where dt is some time constant and r is a random integer uniformly distributed between 0 and 2^k , for the k -th retransmission attempt.

This information also comes from wikipedia.com . See “Exponential Backoff”