Subject: Re: converting ieee-float-format to pw-wave-float-format
Posted by grunes on Fri, 26 Aug 1994 12:47:11 GMT
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In article <33k7s5$972@elna.ethz.ch> SLAMECZKA@EZINFO.VMSMAIL.ETHZ.CH (SLAMECZKA,MICHAEL) writes:
> Now what is this IEEE format?
> Which bits are the exponent, which are the mantisse and how to translate it
> to pw_wave??

Be clear on one thing: there is no IDL or PV-Wave floating point format, when used with readu and writeu.

They use what ever is normal for their machines. i.e.--if you read it back on the same computer that you wrote it on, everything would be fine.

I don't recall the exact format, but on a MSB first machine I believe the order is:
Sign Bit (NOT twos complement format)
Base 2 exponent, excess notation
Mantissa, with assumed (not present) leading 1 (except for true zero, which is represented by all zero bits)

On your PC (a LSB first machine) the bytes (NOT the fields) are in reversed order. Also: IEEE includes a variety of NANs to represent overflows, underflows and undefined values.

If you experiment, you should be able determine how many bits of exponent and mantissa work. I seem to remember about 11 exponent bits, which would give about 32-1-11 mantissa bits (+ the assumed leading 1 bit).
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