
Subject: Reading IEEE floating point on DEC OpenVMS

Posted by [system](#) on Thu, 11 May 1995 07:00:00 GMT

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Is there a way in PV-WAVE or IDL for DEC OpenVMS to read an unformatted external data file which contains IEEE 4-byte and 8-byte floating point numbers?

I assume this involves conversion from IEEE representation to the default internal VAX or AXP representation (F_floating for single precision and D_floating (VAX) or G_floating (AXP) for double precision).

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Subject: Re: Reading IEEE floating point on DEC OpenVMS

Posted by [thompson](#) on Thu, 18 May 1995 07:00:00 GMT

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system@ir.phys.chem.ethz.ch (Ulrich Schmitt, Phys. Chem., ETH Zurich) writes:

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> -----
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> -----

Look at the routines IEEE_TO_HOST and HOST_TO_IEEE available from the Astronomy User's Library at URL

<ftp://idlastro.gsfc.nasa.gov/pro/misc/>

These routines use BYTE_ORDER routine with the appropriate keywords to do the conversion. Note that this assumes that the IEEE values have the standard

byteorder. If you're trying to read values that were written on a machine that uses a reversed byte order, such as Ultrix or OSF, then you may need to reverse the bytes first before applying IEEE_TO_HOST.

The best thing to do, if you can manage it, is to use HOST_TO_IEEE on the data before writing it, and then you can use IEEE_TO_HOST on any other machine to read it. That way, you never have to worry about differences in byte-ordering or data representation between machines.

IDL only supports F_float and D_float representations. In OpenVMS, it uses the same data representations on both VAX and AXP platforms.

Bill Thompson
