Subject: Re: Converting Byte Arrays
Posted by David Foster on Mon, 06 Oct 1997 07:00:00 GMT
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Thomas Price wrote:
>
> I am struggling with a file i/o problem. I have a data file which comes
> from a PC. I know the data structure in terms of how many bytes correspond
> to each entry in the file and what file type for each of these entries
> (i.e. integer, real, etc). Generally, I two bytes into a variable for a
> integer and 4 bytes for a real. I can convert the integers simply enough.
> For a variable named id which is a bytarr(2) the integer is simply
> 256*id(1)+id(0). However, how can I convert the 4 byte arrays which are
> floats into the proper numbers? I seem to come up with gibberish if I do a
> simple float(val) where val=byytarr(4).
>
> Any thoughts or tricks? All help much appreciated.

Remember that the byte-ordering on Suns and PCs is reversed. I think
the easiest and most efficient thing to do would be to read the
data into variables directly, using the appropriate data-type,
and then convert them using the BYTEORDER() routine.

If you are going to convert short integers by hand then I think
you might need:

 256*id[0]+id[1]

to account for the reversed byte ordering.

Dave
--

  ~~~~~~ ~~~~~~
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Subject: Re: Converting Byte Arrays
Posted by Liam Gumley on Mon, 06 Oct 1997 07:00:00 GMT
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Thomas Price wrote:

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> simple float(val) where val=byytarr(4).

One way to read a data file with mixed variable types (integers, floats) is by
using an anonymous structure, e.g.

record = { var1:0, var2:0L, var3:0.0 }
openr, lun, file, /get_lun
readu, lun, record
free_lun, lun
help, record.var1, record.var2, record.var3

will read the first three variables from the file, where
var1 is a 16 bit signed integer,
var2 is a 32 bit signed integer,
var3 is a 32 bit float.

If you need to swap bytes to go from PC to Unix, just do

record = swap_endian(record)
help, record.var1, record.var2, record.var3

If you have many similar records to read, then you can use

data = make_array(nrecords, value = record)

to make an array of structures, and then read this array in one hit.

Cheers,
Liam.

Subject: Re: Converting Byte Arrays
Posted by Michael Slameczka on Tue, 07 Oct 1997 07:00:00 GMT
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Liam Gumley wrote:

....
> record = swap_endian(record)
        ^^^^^^^^^^^

where is this function? It is not mentioned in my help-file of PV-Wave!

cheers
michael