Subject: Re: VMS vs UNIX, unformatted binary files
Posted by chase on Wed, 15 Feb 1995 23:09:54 GMT
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>>>> > "Lars" == Lars Soeraas <lars@rapid.fi.uib.no> writes:
In article <3ht8pb$qsj@due.uninett.no> lars@rapid.fi.uib.no (Lars Soeraas) writes:

Lars> We are trying to read unformatted binary files in IDL on a
Lars> UNIX system (HP 9000, series 700). The files to be read have been
Lars> generated by IDL on a VAX VMS. The problem is that the bytes are
Lars> swapped and the files contain a mixture of lonint, int, floats
Lars> and character strings. We have an idl program to read the files
Lars> which works well on a VAX but returns garbage on the UNIX system.
Lars> Is there a simple way of avoiding this problem?

Use XDR format. This format is portable among versions of IDL running
on different machines. This is a special portable binary format that can be
read by other programs (e.g., C and PASCAL) on machines that have the
XDR library. See Chapter 17 of the IDL User Guide.

To use the XDR format, just add the /XDR keyword to your open
statements in IDL. It is that easy.

If you want to create XDR files with other programs for IDL to read,
there is an example in the User Guide. It is C program that creates
an XDR data file which is then easily read into IDL.

Chris
--
==============================
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Subject: Re: VMS vs UNIX, unformatted binary files
Posted by rivers on Thu, 16 Feb 1995 03:29:32 GMT
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In article <3ht8pb$qsj@due.uninett.no>, lars@rapid.fi.uib.no (Lars Soeraas) writes:
> We are trying to read unformatted binary files in IDL on a
> UNIX system (HP 9000, series 700). The files to be read have been
> generated by IDL on a VAX VMS. The problem is that the bytes are
> swapped and the files contain a mixture of lonint, int, floats

> and character strings. We have an idl program to read the files
> which works well on a VAX but returns garbage on the UNIX system.
> Is there a simple way of avoiding this problem?

You can swap the byte order in the "longs" and "ints" with BYTEORDER. However,
there are no built-in routines in IDL on the HP to convert VAX float to
IEEE float. The inverse routines do exist: you can convert VAX float to IEEE
float on tha VAX before writing the data to disk. Again, use the BYTEORDER
routine. If the data are only to be read by IDL the simplest thing to do
is SAVE, /XDR which saves the variables in the portable XDR format.

_____

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Subject: Re: VMS vs UNIX, unformatted binary files
Posted by ryba on Thu, 16 Feb 1995 14:52:22 GMT
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In article <CHASE.95Feb15180954@retro.jhuapl.edu>, chase@retro.jhuapl.edu (Chris Chase
S1A) writes:
|> >>>>> "Lars" == Lars Soeraas <lars@rapid.fi.uib.no> writes:
|> Lars> We are trying to read unformatted binary files in IDL on a
|> Lars> UNIX system (HP 9000, series 700). The files to be read have been
|> Lars> generated by IDL on a VAX VMS. The problem is that the bytes are
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|> Lars> and character strings. We have an idl program to read the files
|> Lars> which works well on a VAX but returns garbage on the UNIX system.
|> Lars> Is there a simple way of avoiding this problem?
|>
|> Use XDR format. This format is portable among versions of IDL running
|> on different machines. This is a special portable binary format that can be
|> read by other programs (e.g., C and PASCAL) on machines that have the
|> XDR library. See Chapter 17 of the IDL User Guide.
|>
|> To use the XDR format, just add the /XDR keyword to your open
|> statements in IDL. It is that easy.
|>
|> If you want to create XDR files with other programs for IDL to read,
|> there is an example in the User Guide. It is C program that creates
|> an XDR data file which is then easily read into IDL.

    A probably simpler way to use XDR format if you have any intention
of reading these files outside of IDL is to use netCDF. The ncdf_*
calls in IDL are very easy to use, and the C and FORTRAN API's for

netCDF are essentially identical to the IDL one. I had a problem with
some F77 unformatted files on a VAX, with some VAX FORTRAN routines
for reading them. I wrote a read/process program in FORTRAN that runs
on the VAX and writes its output as a netCDF file, then FTP the file
over, and use IDL (and other C programs) to read them on the Sun. Of
further benefit is the fact that netCDF is a standard self-documenting file
format, which beats custom file formats. Hell, even NCSA Mosaic can parse
a netCDF file, and Collage and Slicer can plot their contents.

```
--
Dr. Marty Ryba            | Generation X:
   MIT Lincoln Laboratory     |       Too young to be cynical,
      ryba@ll.mit.edu       |  too old to be optimistic.
Of course nothing I say here is official policy, and Laboratory affiliation is
for identification purposes only, blah, blah, blah....
```

Subject: Re: VMS vs UNIX, unformatted binary files
Posted by thompson on Fri, 17 Feb 1995 15:25:52 GMT
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lars@rapid.fi.uib.no (Lars Soeraas) writes:

> We are trying to read unformatted binary files in IDL on a
> UNIX system (HP 9000, series 700). The files to be read have been
> generated by IDL on a VAX VMS. The problem is that the bytes are
> swapped and the files contain a mixture of lonint, int, floats
> and character strings. We have an idl program to read the files
> which works well on a VAX but returns garbage on the UNIX system.
> Is there a simple way of avoiding this problem?

The IDL astronomy library <URL:ftp://idlastro.gsfc.nasa.gov> has some software
to convert VAX data to Unix format. Look particularly at the routines

```
 conv_unix_vax.pro
 conv_vax_block.pro
 conv_vax_unix.pro
 read_vax_block.pro
```

in the /pro/misc subdirectory.

Bill Thompson

Subject: Re: VMS vs UNIX, unformatted binary files
Posted by lars on Mon, 20 Feb 1995 11:55:02 GMT
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Thank you for your responses to our question. We have now gotten the software we needed from the <URL:ftp://idlastro.gsfc.nasa.gov> archive.

Greetings,

  Rune & Lars