Subject: Re: Reading in a bunch of bytes
Posted by peter on Wed, 03 Jul 1996 07:00:00 GMT
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Phil Williams (williams@irc.chmcc.org) wrote:

: I have a binary file of 2 256x128x64 arrays of longs that are
: interleaved by rows. Here's what I do to try and read it:

: openr,1,'file'
: s = fstat(1)
: data = bytarr(s.size)   ; s.size = 8388608 = 256*128*64*4
: readu,1,data
: close,1

: xsize = 256
: ysize = 128
: zsize = 64

: junk1 = fltarr(xsize,ysize,zsize)
: junk2 = fltarr(xsize,ysize,zsize)

: offset = xsize*4.   ; 4 bytes/pixel
: k = 0

: for i = 0,zsize-1 do begin
:   for j = 0,ysize-1 do begin
:   off1 = offset*long(k)
:   off2 = offset*long(k+1)
:   junk1 = long(data,off1,xsize)
:   junk2 = long(data,off2,xsize)
:   k = k + 2
:   endfor
: endfor

: end

: Everything looks good to me, but I always end up offsetting past the end
: of the data. Any help would be greatly apreciated!

Phil,

Many inconsistencies in the above. If your file is 2 256x128x64 arrays
of longs, then the size should be 256*128*64*4 * 2 (a long is 4 bytes,
right?). Why are junk1 and junk2 declared as fltarr, not lonarr? Are
you sure that the file isn't really ints (2 byte ints)?

But that is all beside the point. If the file is longs, then read it as

longs, not as bytes. The following should be *much* faster.

```
   data = lonarr(256,2,128,64)
   readu,1,data
   data1 = reform(data(*,0,*,*),256,128,64)
   data2 = reform(data(*,1,*,*),256,128,64)
```

You are also getting to the size of data (16M, from your description) that you may not be able to afford to casually allocate twice the space you need, as the above does. You might be better off reading things in a plane at a time, and de-interleaving each plane into the two destination arrays. This carries a memory overhead of 1/64 of the original, but loops only 64 times, which shouldn't be too bad.

```
   data1 = lonarr(256,128,64)
   data2 = lonarr(256,128,64)
   plane = lonarr(256,2,128)
   for z=0,63 do begin
 readu,1,plane
 data1(*,*,z) = plane(*,0,*)
 data2(*,*,z) = plane(*,1,*)
   endfor
```

Hope this helps,

Peter

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