Subject: error reading a large number of binary files
Posted by Mark Branson on Fri, 20 Apr 2007 22:21:24 GMT
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Is there any particular reason why IDL would struggle reading a really large number of binary files? I'm trying to compute a number of statistics from the ECWMF ERA40 reanalysis 4*daily data, which is a HUGE amount of data. The data was originally in Grib format, which I converted to ieee binary with the wgrib program. Each file contains a month's worth of data, which has 23 pressure levels. In trying to track down the cause of the error I'm getting, I've pared the program down to what you can see below (just compute the long-term average zonal wind). FWIW, I'm running this on a Mac PPC Quad G5 with 8GB of RAM, and it's IDL 6.3.

What happens is that I get an error message like this:

```
% READU: Corrupted f77 unformatted file detected. Unit: 100, File:
daily_4/u196710.bin
% Execution halted at: READUDAILY       19 /Users/mark/Datasets/
era40/readudaily.pro
%                $MAIN$
```

And on repeated trials, the error always occurs in a different file.
And I know that none of the files are actually corrupted.
Interestingly, I wrote a similar program in fortran and using the NAGWare compiler it has similar problems, but it worked successfully using the xlf fortran compiler. However, I'd prefer to have it work in IDL, but I cannot for the life of me figure out what I'm doing wrong.

Any ideas?

Thanks in advance,
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```
pro readudaily

; read 4*daily ECMWF ERA-40 reanalysis wind data

x = fltarr(144,73)
ubar = fltarr(144,73,23)

infiles = FILE_SEARCH('daily_4/u*.bin')

icnt = 0L & totcnt = 0L
```

```
mm = 9   ; first file is sept 1957
for i = 0,n_elements(infiles)-1 do begin
  openr, lun, infiles[i], /get_lun, /binary, /f77_unformatted
  print, infiles[i]

  iday = 1 & ihr = 0
  while not EOF(lun) do begin
    for ilev = 0,22 do begin
      readu, lun, x
      ubar[*,*,ilev] = ubar[*,*,ilev] + x[*,*]
    endfor
    icnt = icnt+1
  endwhile

  free_lun, lun

  case 1 of
    (mm eq 2) : begin
          if icnt NE 112 then $
            print, '>>> file = ',infiles[i],' icnt = ',icnt
        end
    (mm eq 1 or mm eq 3 or mm eq 5 or mm eq 7 or mm eq 8 or mm eq 10
or mm eq 12) : begin
          if icnt NE 124 then $
            print, '>>> file = ',infiles[i],' icnt = ',icnt
        end
    (mm eq 2 or mm eq 4 or mm eq 6 or mm eq 9 or mm eq 11) : begin
          if icnt NE 120 then $
            print, '>>> file = ',infiles[i],' icnt = ',icnt
        end
  endcase

  if mm EQ 12 then mm = 1 else mm = mm+1
  totcnt = totcnt + icnt
  icnt = 0L

endfor
print, '>>> totcnt = ',totcnt

; compute mean
for ilev = 0,22 do $
  ubar[*,*,ilev] = ubar[*,*,ilev]/float(totcnt)

openw, lun, 'ubar-annual-idl.data', /get_lun
writeu, lun, ubar
free_lun, lun

end
```