
Subject: Problem with reading IDL written binary file....corrupt values?

Posted by [Dave\[2\]](#) on Fri, 20 Jan 2006 14:04:35 GMT

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Hi Group...I'm having a problem reading some binary data I write to a file in IDL. Everything looks great until I try to read data from the file after I close it. What I am doing is as follows:

I'm spawning to my UNIX command shell to run a C program that creates a 5 column text file that looks like this:

-121.375491	39.049994	14.722300	836	201826173
-121.375254	39.049994	15.247306	595	201831399
-121.369433	39.049994	15.551452	836	201831589
-121.374392	39.049994	17.324328	668	201832516
-121.369364	39.049994	14.978454	676	201831695
-121.378077	39.049994	10.458236	484	201827779
-121.368601	39.049994	14.737473	841	201832916

It's approximately 1 million records in length (X,Y,Z, intensity, GMT packed time) and the program is called numerous times to create a series of txt files. each is done in pieces given the data is eventually hundreds of millions of records.

> From there I generate a binary file in IDL using the code below from the text file above.

; Initialize the type for some variables:

```
lat_e = 0.0D
lon_e = 0.0D
zval_e = 0.0D
int_e = 0L
time_e = 0L
lon = lonarr(wtch)
lat = lonarr(wtch)
zval = 0L
wtch=1
```

; Define single record header:

```
numwords = 8
numwords0 = 5
```

```

numwords1 = 4
header = lonarr(numwords)
header[0] = numwords*4L ;set record length

for i = 1, numwords-1 do begin
header[i] = 0 ;default other header words to zero
endfor

final_rq_file = ' '

for j = 0, wtch-1 do begin
; Set text file to be written to rq format file:
openr, j+1, ofilename_NAVD88_txt(j)
endfor;

; Open final binary file to be written:
ftype = '_elv_'
fname_ext = '_navd88.rq'
final_rq_file = outpath + fname_noext + ftype + area_code +
fname_ext
openw, 3, final_rq_file
writeu, 3, header

WHILE NOT eof(1) DO BEGIN
readf, 1, lon_e, lat_e, zval_e, int_e, time_e,
format='(f15.6,f15.6,f12.3,i10,i20)'
elv_recs_rq = elv_recs_rq+1
lon_e = ((lon_e)*1e6)
lon[0] = long(lon_e)+3600000000L
lat_e = (lat_e)*1e6
lat[0] = long(lat_e)
zval_e = zval_e*1e3
zval = long(zval_e)
writeu, 3, lat[0], lon[0], zval, int_e[0], lat[0], lon[0], 0,
time_e
;print, 'lat[0], lon[0], zval, int_e[0], lat[0], lon[0], 0,
time_e'
ENDWHILE

free_lun, 1
close, 1
free_lun, 2
close, 2
free_lun, 3
close, 3

;-----
;
;
```

;

The data being written to the binary file looks great if I look at it row by row when it's being written but when I try to access the data using the code below it comes out strange.

Data results using the code below:

First two rows of data:

```
      32      0      0      0      0
0      0      0
      39049994 238624509 43618      836 39049994
238624509      0      3079
```

;Everything looks great in this first two rows except for the last column. The first row is a header, the second is the data?

;This second rows last column should be the same as the last column in the text file above. column 5, and 6 are a clone of 1 and 2.

Number of Records in file : 852510

opening integer file

outfile data type:

DATA LONG = Array[8, 852510]

This call to get_file_chunk.pro is complete

;When I print the data after reading it in it gets worse:

```
print, data(*,1:2)
-1619197357 -620097991 535429120 -1402077184 38994515 -620097991
535429120 0
201831399 39049994 238630567 44419 836 39049994
238630567 0
```

Anyone have a suggestion on what might be happening?

```
;  
_____  
;  
_____  
;-----code to read in the IDL Written binary file
```

pro extract_rq, file = fname

;this procedure extracts level2 data ;David Finnegan

;keywords:

;file = input path and file name

;Procedures called get_file_chunk.pro

IF NOT Keyword_set(file) then begin

```

fname=dialog_PICKFILE(GROUP=b,/READ,PATH=path,FILTER=["*"],TITLE='select
data file',/MUST_EXIST)
ENDIF

fname1 = file_basename(fname)
ipath=file_dirname(fname, /mark_directory)
ipath_fname= ipath+fname1

offset_l2 = 0LL
while offset_l2 ne -1LL do begin
    offset_l2 = get_file_chunk(data,'integer', offset_l2,
file=ipath_fname, maxrecs=10000000L)
endwhile

return
END ; extract_rq
.*****
;
.*****
;
; get_file_chunk.pro
; IDL routine to read data from Airborne Oceanographic Lidar
;
;
; modified to read data from file in chunks
;
;
; usage: a=get_file(data,type,offset,FILE=filename,MAXRECS=maxrecs)
;   a= offset value (in bytes) of data read. Set to -1 on end of file.
;   data= array into which file data is read. the type and size are set
by the get_file.
;   type= 'float' or 'integer'
;   offset= defines number of bytes into file to begin getting data
(excludes header bytes)
;   - set equal zero on first call to function.
;   FILE= optional keyword specifying file to be read. If absent then
the
;   PICKFILE routine is called to interactively specify the file to
be read.
;   SUBSAMP= optional keyword specifying the amount of subsampling.
every Nth point is read.
;   MAXRECS= defines number of records to return per get (if not
specified in parameter list
;   - default = 1e4
; Note: header data in the data file is stripped automatically.
;
;
.*****
;
FUNCTION
get_file_chunk,data,datatype,offset,FILE=filnam,SUBSAMP=subsamp,MAXRECS=maxrecs

if NOT Keyword_set(filnam) then begin

```

```

    filnam=pickfile(GROUP=b,/READ,PATH=path,FILTER=["*"],TITLE='select
data file',/MUST_EXIST)
    if filnam EQ " then Return, 0
    endif

if keyword_set(maxrecs) then numrecsperchunk = maxrecs ELSE
numrecsperchunk = 10000L

;%%%%%%%%%% read the selected data file %%%%%%%%%%%
;; if first pass open file else reset pointer to start of file

;open the file
openr,lun,filnam,/get_lun

;initialize a variable for number of records in each line
;and create a data array call DATA
reclen=0L
readu,lun,reclen
point_lun,lun,0
data=lonarr(reclen/4,2 ,/NOZERO)
readu,lun,data

print, "
print,'First two rows of data: '
print, data(*,0)
print, data(*,1)
print, "

;Check the AOL Header to determine what the nskip should be
    IF (data(0,1) EQ -9000008L) THEN nskip=data(1,1) ELSE nskip=reclen

;Set filinfo with the fstat structure of the file opened
;and determine the number of records in the file for numrecs
filinfo=Fstat(lun)
numrecs= (filinfo.size-nskip)/reclen
reclen=reclen/4
nskip = nskip + offset

;note: reclen is the number of words in each record
if (numrecs - (offset/(reclen*4))) LT numrecsperchunk then begin
    numrecsperchunk  = numrecs - (offset/(reclen * 4))
    offset = -1
endif else begin
    offset = offset + (numrecsperchunk * (reclen * 4))
endelse

IF (DATATYP EQ 'integer') THEN begin

```

```
    a=assoc(lun,lonarr(reclen,numrecsperchunk),nskip) & print,'opening
integer file'; & Info,"opening INTEGER data file"
ENDIF ELSE begin
    a=assoc(lun,fltarr(reclen,numrecsperchunk),nskip) & print,'opening
float file'; & Info,"opening FLOAT data file"
ENDELSE
data=a(0)

free_lun,lun

print, 'This call to get_file_chunk.pro is complete'

Return, offset

end ; get_file
```
