Subject: HELP: Memory allocation problem
Posted by <FUHRER on Tue, 09 Nov 1993 06:27:38 GMT
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I am posting this for Markus Heuer, who has not yet access to
Internet / Usenet.

"I am using IDL procedures/functions TRIANGULATE and TRIGRID with huge amounts of sample data on VAX/VMS (IDL Verson 3.0.0, VMS Version 5.5, machine: VAX 4000/90). To reduce the required array sizes, I split the rectangular resampling region into smaller subrectangles and collect the data lying in them. However, the arrays inevitably contain several 100'000 elements.

When increasing the sample array sizes beyond 100'000, I encounter a memory allocation problem, i.e. the program stops with the error message:
'unable to allocate memory: to make array. not enough core'. The error is reproduced with the following short test procedure:

```
PRO TestTriangulate, Ndata, Nloop

    FOR l = 0, Nloop-1 DO BEGIN
        ; generate random sample data
      x = RANDOMU(sd, Ndata)
      y = RANDOMU(sd, Ndata)
      z = RANDOMU(sd, Ndata)
        ; regridding sample data
      TRIANGULATE, x,y, trg
      r = TRIGRID(x,y,z, trg)
        ; deallocating data and work arrays
      x = 0.
      y = 0.
      z = 0.
      trg = 0.
        ; test memory in use
      HELP, /MEMORY
    ENDFOR

    END
```

What is surprising: the error occurs only AFTER one or more successful passes through a resampling cycle. And: allocating large FLTARR's works up to much larger sizes of 8'000'000, and a short C program calling malloc produces allocation failures at about the same large size of 8M elements.

Questions:

- Is the problem due to VAX system parameter settings? (The system manager already tuned system parameters).

- Could it be a memory leakage problem in IDL procedures TRIANGULATE and TRIGRID (results of HELP, /MEMORY inserted in the loop above suggest this, although the discrepancies are small)?
- Might there be problems with the VAX implementations of the C functions malloc and free presumably used in the implementations of TRIANGULATE and TRTGRID?
- Is there a workaround for the memory allocation failure, APART FROM reducing large array sizes (which I really need in the application at hand)?

A quick solution would be helpful since the mentioned application is supposed to be up and running in about 2 weeks".

Markus Heuer

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