Subject: Re: Bug? yea or nay.
Posted by Paul van Delst on Fri, 16 Feb 2001 14:35:09 GMT
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William Daffer wrote:
>
> Again, aside from the disagreement between N_tags and the actual I/O
> that's going on, I was hoping someone could explain to me *how* a
> structure that starts with the largest type and works downward could
> *possibly* have any padding.

If one of the requirements for efficient data storage and retrieval in memory is to align data boundaries defined by the largest type in the structure? (I'm postulating... not stating).

```
IDL> print,!version
{ mipseb IRIX unix 5.3 Nov 11 1999}
IDL> r={a:0.d, c:0L} & print,n_tags(r,/length)
        16
```
== Everything lined up on 8-byte boundary

```
IDL> r={c:0L,a:0.d} & print,n_tags(r,/length)
        16
```
== Still on 8-byte boundary...even though 4-byte is first.

```
IDL> r={a:0L, c:0L, d:0L} & print,n_tags(r,/length)
        12
```
== Whoa... 4-byte boundaries now. How 'bout that (I'm not being sarcastic, I did not expect this result)

The last result suggests to me that how IDL/the OS (insert hand-waving here) decides to allocate space in memory is dependent on the structure types.

> Clearly I'm missing something.

I don't think so, apart from the fact that memory allocation for structures seems to be (sort of) dynamic depending on what is in the structure.

Also, FWIW, I disagree with Nigel Wade that this is "operator error". I think N_TAGS should return the sum total of the sizes of the structure elements, NOT the amount of memory said structure occupies. If one was dealing with accessing system memory for OS purposes, fine. But IDL is a simple tool for playing with data - why should the user care whether the structure is padded in memory or not? I think your definition of TOTSIZE(r) is the "correct" one IMO.

paulv

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Paul van Delst
CIMSS @ NOAA/NCEP
Ph: (301)763-8000 x7274
Fax:(301)763-8545
pvandelst@ncep.noaa.gov

A little learning is a dangerous thing;
Drink deep, or taste not the Pierian spring;
There shallow draughts intoxicate the brain,
And drinking largely sobers us again.
Alexander Pope.