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Subject: Re: strings and memory usage

Posted by [Jim Pendleton, ITT Vi](#) on Wed, 22 Aug 2007 20:08:16 GMT

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Take a look at the IDL External Development Guide's discussion of the IDL\_Variable structure and the IDL\_String structure. In summary, an IDL\_Variable (a descriptor) points to an IDL\_String, which is itself a descriptor and not just a null-terminated byte vector.

If anyone (anyone?!!) recognizes the call "OTS\$SCopy\_DX\_DX()", you'll understand the historical reason for this.

Jim P.

"Conor" <cmancone@gmail.com> wrote in message

news:1187808869.444817.321600@r23g2000prd.googlegroups.com.. .

> Does anyone know how IDL stores strings? I'm creating some very large  
> string arrays and running out of memory when I shouldn't. So, for the  
> following example I'm using the linux command 'top' to keep track of  
> memory usage on a per-process basis. In the beginning, IDL is using  
> 59 megabytes. Then, I create a string array with 5 million elements  
> like this:

>  
> test = strarr(5000000) + 'asdf'  
>

> Now I have a string array with 5,000,000 elements, each with 4  
> characters in it. According to top idl is now consuming 177  
> megabytes! That means that each string takes up an average of 23  
> bytes! To make matters worse, when I delete test (delvar,test) IDL  
> drops back down to 120 megabytes!

>  
> What in the world is going on? Naively, I would expect a string array  
> with strings 4 characters long to take up an absolute maximum of 8  
> bytes per element (4 bytes for the characters, 2 bytes for the length,  
> and maybe two bytes for pointers). Why is it taking up 23 bytes???  
> Am I just confused about something? Also, why doesn't the memory  
> usage drop back down to it's original value? I did notice one thing.  
> When I then created more large variables, the memory usage didn't  
> increase right away, so maybe IDL is clearing the memory but not  
> releasing it to the operating system. Still, I find these problems  
> very troubling. Is there something very wrong with the string arrays  
> in IDL, or am I just being silly?  
>

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