Subject: Re: A simple DLM question
Posted by Jim Pendleton on Tue, 28 Aug 2012 16:06:44 GMT
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On Monday, August 27, 2012 4:04:43 PM UTC-6, Xin Tao wrote:
> Thanks Jimmy. That indeed solved my problem. It was so confusing to me, because I found from the External Development Guide that IDL_DELTMP should check it first. :)
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> On Monday, August 27, 2012 3:48:27 PM UTC-5, jimmylee...@gmail.com wrote:
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>> On Monday, August 27, 2012 11:13:57 AM UTC-6, Xin Tao wrote:
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>>> Hi,
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>>> I'm having trouble figuring out the problem of the following DLM code:
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>>>  /* The c routine */
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>>> void simple(int argc, IDL_VPTR argv[])
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>>> {
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>>>   IDL_VPTR v;
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>>>   v = IDL_BasicTypeConversion(1, &argv[0], IDL_TYP_DOUBLE);
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>>>   IDL_DELTMP(v);
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>>> }
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>>> This routine just takes its input and convert it to double. After converting it to a DLM, however, I seem to see strange results.
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>>> IDL> simple, 1.0d
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>>> % Loaded DLM: TESTMODULE.
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>
>>> IDL> simple, -1.0d
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>>> Bus error
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>>> That is: if I give it 1.0d as input, then the code is fine. However, if I use -1.0d, then there is a BUS error, presumably from IDL_DELTMP(v). I really don't understand why this is the case. Isn't IDL_DELTMP supposed to decide first whether v is a temporary variable or not? If I remove IDL_DELTMP, of course, I'll frequently get the annoying warning message "% Temporary variables are still checked out - cleaning up...".
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>>> Please give me some help. Thanks.
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>> Try this:
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>> if (v != argv[0]) IDL_DELTMP(v);
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>
>> That is, no conversion was necessary.
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>> The macro (in idl_export.h, if you're interested) doesn't do extensive checking, and you should only free variables that are temps, not expressions or constants.

The docs are correct, but are confusing if you're not aware of the difference between IDL's temporary variables, constants, and named variables. It's not stated explicitly in this section that a constant like 1.0D is a different sort of data type internally than an expression or named variable, though that topic is discussed earlier in the docs.

IDL_DELTMP doesn't check if the IDL_VARIABLE has the contant flag set (IDL_V_CONST), only the temporary flag (IDL_V_TEMP).

As a matter of habit, I always check the equality of the argv[] used as input against the output from any type conversion routine call before calling IDL_DELTMP. You can't predict when a user has entered an explicit constant value, rather than a variable name or expression.
