Subject: Re: DOUBLE precision no precise??
Posted by James Kuyper on Tue, 05 Mar 2002 16:29:10 GMT
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Vincent Schut wrote:

> David Williams wrote:
...

>> To try and find where the problem is, we tried the following lines...
>>
>> IDL> a = DOUBLE(42766.080001)
>> IDL> print,a,FORMAT='(F24.17)'
>>
>> 42766.07812500000000000
...

> I'm no expert on math precision, but I think that this is a known
> 'problem', caused by the different possible ways to store floating point
> precision data. (For example, different C++ compilers also give
> different values for a double precision float constant of pi, nice eh?

It's not quite the same problem. The C++ problem is due to the fact that different implementations of C++ are free to implement double precision math with different degrees of precision. There's a minimum required precision, but it's not a very strict requirement. And since the C standard library isn't even required to provide a value of pi, implementations are free to provide it with whatever precision they choose.

The IDL problem is due to the fact that the default precision in IDL is 'FLOAT', rather than 'double', which is the default precision for C/C++. Thus,

	IDL	C/C++
float		
	42766.080001	42766.080001F
double		
	42766.080001D	42766.080001
long double	N/A	42766.080001L