Subject: Re: DOUBLE precision no precise??
Posted by Martin Downing on Tue, 05 Mar 2002 14:30:30 GMT
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Hi David,

James is correct. You are attempting to assign a double constant
incorrectly, since the default for a floating point constant is a single
precision (FLOAT) number. Append with the letter "d" and all will be well.
You will find many recent discussions in the group on the consequences of
floating point arithmetic with inadequate precision, in the mean time I hope
the following helps you see where your precision was lost!

cheers

Martin
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IDL> a = 42766.080001

IDL> help , a

A FLOAT = 42766.1

IDL> print, a, format = '(f30.20)'

42766.07812500000000000000

IDL> a = double(a)

IDL> print, a, format = '(f30.20)'

42766.07812500000000000000

IDL> a = 42766.080001d

IDL> help , a

A DOUBLE = 42766.080

IDL> print, a, format = '(f30.20)'

42766.08000100000200000000

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"David Williams" <d.williams@qub.ac.uk> wrote in message
news:3C84B20D.57963F41@qub.ac.uk...
>
> I've always had heaps of help from the inhabitants of this newsgroup --
> for which I am eternally grateful -- despite my often stupid questions.
> So, when a mate of mine came across this `quirk' yesterday, and I wasn't
> sure how to help him out, I thought I'd ask this group.
>
> He has an array of numbers that he wants to apply a user-defined
> function to, but we're both a little disturbed by the fact that if you
> do the calculations with a pocket calculator, you get different numbers
> than if you perform the same calculation in IDL.
>
> 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
>
> As you see, the number we get out isn't the same as the number we
> entered. I'm guessing it's to do with the way IDL stores numbers in
> memory, but my understanding of low-level computational processes isn't
> great.
>
> Can anybody help me understand what's going on, and/or if there's a way
> around? I'd really appreciate whatever help is on offer, so thanks in
> advance.
>
>
> Dave
>
> -- ---------
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