Subject: Re: 10 bytes real
Posted by Peter Mason on Mon, 30 Oct 2000 21:46:30 GMT
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"Karl Schultz" <kschultz@researchsystems.com> wrote:
<...>
> Also, the 80x87 math processors on wintel machines are 80-bit anyway
> and I think that there are instructions that would load 80-bit floats
> into the floating point regs. After you've done that, you can read
> them back out as a double. I don't know if there is any C compiler
> support.
<...>

Apparently the MS visual C compiler knows about "long doubles" - 80-bit IEEE floating point numbers.
Provided that your 10-byte numbers are indeed IEEE FP format, you should be able to use the following routine (compiled etc) to do the conversion. On the input side I gues you'd just use a BYTARR or something, stuffed with the inscrutable 10-byte reals, and for the output you'd present a DOUBLE array of the right size - hopefully it will get filled with something useful :-)
I haven't tested the routine below. (In fact I've never used a "long double" before.) But give it a try.
If you don't have a MS visual C compiler, let me know and I will compile the routine for you.

Cheers
Peter Mason

```
/*
 10-byte to 8-byte IEEE floating-point converter (untested).
 Peter Mason, CSIRO DEM, October 2000
*/
#define STRICT
#define VC_EXTRALEAN
#include <windows.h>

 /********************************************************** ************
******/
BOOL WINAPI DllMain(HINSTANCE hinst, unsigned long reason, void *resvd)
{
 hinst=hinst;  reason=reason;  resvd=resvd;
 return 1;
}
 /********************************************************** **********/
/*
  This is it.
```

```
  The call is:
    status=call_external('[pathfconv.dll','idlfp10to8',in10,out8 ,n)
  . in10[n] is an array of 10-byte IEEE floating-point numbers;
  . out8[n] is an array that will be filled with the conversions;
  . n is the number of numbers (in all its splendour?)
*/
int WINAPI idlfp10to8(int ac, int *a[])
{
 register long double *in10;
 register double  *out8;
 register int  n;
 if(ac!=3) return 1; //incorrect number of arguments
 in10 = (long double *)a[0];
 out8 = (double *)a[1];
 n = *a[2];
 for( ; n; --n, ++in10, ++out8) *out8 = (double)(*in10);
 return 0;
}
 /********************************************************** **********/
```

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