Subject: Re: Object graphics under Linux: are they supposed to be that slow?
Posted by Mark Hadfield on Wed, 30 Jan 2002 03:00:02 GMT
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Several people have asked me for a copy of the program on which I based my assessment that IDL object graphics is considerably slower in Linux than in Windows. I haven't made it available yet, because it is entangled deeply in my IDL libraries; it doesn't make a very good benchmark anyway because it is event-driven and it's hard to include the timing functions. What I do have is an object-graphics benchmark program called TIME_TEST_GR2. This was originally written by Randall Frank and copyright is held by RSI. I am making it available by kind permission of Randall Frank and Karl Schultz:

http://katipo.niwa.co.nz/~hadfield/gust/software/misc/time_t est_gr2.pro

This version is functionally identical to the original but prints out a little more information about the window and device properties.

Perhaps TIME_TEST_GR2 could be part of JD's revised benchmark suite? However it does have the drawback that it takes quite a while to run (~ 10 minutes) and you can't do much else on the system while it's running.

I have also produced 3 files of TIME_TEST_GR2 output generated on my system:

http://katipo.niwa.co.nz/~hadfield/gust/software/misc/ttgr2_ Windows.txt

http://katipo.niwa.co.nz/~hadfield/gust/software/misc/ttgr2_ Windows_Renderer _1.txt

http://katipo.niwa.co.nz/~hadfield/gust/software/misc/ttgr2_ Linux.txt

The configurations are:

* IDL 5.5 on Windows 2000 using RENDERER=0 (hardware)
* IDL 5.5 on Windows 2000 using RENDERER=1 (software)
* IDL 5.5 on Linux. This uses RENDERER=0 but, as is obvious from the DeviceInfo string, the rendering is carried out by the Mesa software library and does not access any hardware acceleration

The geometric-mean elapsed time figure provides a rough ranking of the configurations:

Windows RENDERER=0	4.58 s
Windows RENDERER=1	3.11 s
Linux	5.55 s

The surprise here is that Windows is slower with RENDERER=0. So much for hardware acceleration! This suggests my graphics controller is no ball of fire. Linux lags behind both the Windows configurations, though not by as much as my original assessment suggested.

I have checked that the Windows and Linux configurations are as similar as possible. The screen dimensions (1280 x 1024) and colour depth (16 bits) are the same in both. I think I may have already mentioned that the PC's graphics controller (Intel 810) has only 4 MB on-board memory (at least that's what the Windows Display properties applet tells me).

I intend to investigate the effect of reducing the number of pixels on the screen. I also intend to investigate the effect of grovelling to our IT people for some better graphics hardware.

The detailed results to TIME_TEST_GR2 are interesting. Windows with RENDERER=0 is notably slow in the instancing test. Linux is notably slow in the polygon test.

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