

A Small Case Study Accelerated-X™ on AIX

Wm E Davis, Feb 2008

Xi Graphics, Inc. ("XiG") was approached by a US-based division of a large, well-known company active internationally as a provider of control systems that employ Wall Displays of computer generated graphics. The division uses IBM System p products, and was having some difficulties with Power5 Model 520 systems, among others, using the IBM model GXT135P graphics card. While the graphics card could support two monitors and had hardware support for image overlays, the IBM-supplied X Window System sub-system software would not support overlays or more than one monitor per GXT135P graphics card.

Within about a 90 day period, XiG had provided the company (now a customer) with not only the ability to use two monitors and image overlays with each GXT135P card, the XiG Accelerated-X brand of X server/driver sub-system software also provided many features not available with the IBM software, and to top it off, increased the speed of the graphics system by a significant amount. Figure 1 shows the results of running the industry standard X11 Perf benchmark - first using IBM's AIX X server/driver software, then using XiG's Accelerated-X Summit Series X server/driver software. The customer also tested the XiG software with his applications software on a number of systems, all running the AIX v5.2 or v5.3 kernels and CDE desktop, to verify correct operation.

Figure 1. IBM GXT135P X11 Performance



In X marks - on IBM Power5 520 box & AIX v5.3
IBM's X server/driver vs XiG's X server/driver

24-bit color	IBM	11.8
	XiG	59.3
8-bit color	IBM	16.8
	XiG	104.2

How They Do That?

It is not unusual for such customers to be a bit surprised at the large increase in performance obtained by the use of XiG's X sub-system software. After all, IBM has been in the business of providing computer systems with their version of UNIX and the X Window System for many years. Until a few years ago, IBM also designed and manufactured its own brand of graphics chips, the latest known as the "Fire GL" models. So it would be natural to believe that IBM graphics would be about as good as one could get in an integrated system - give or take a few percentage points.

But the world of computer graphics has changed dramatically down at the system level - where the computer and graphics hardware first meets the graphics software, the level we call the X graphics sub-system. Not long ago, HP was also a leader in high-performance graphics