

IBM's Intellistations Really Are

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*SPECIAL TO
CAD SYSTEMS*

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A look at IBM's just-updated Intellistation lineup is all that one needs to see why the company is still an industry leader. The machines look slick. Check under the hood; take the machine for a road-test; that slick look is sustained where the rubber meets the computing highway.

IBM has a lot of experience designing workstations. Early implementations coupled graphics terminals to mainframes. Later standalone systems based on different generations of IBM-designed silicon were regularly included on the best-of-breed list.

No small part of the reason: IBM is a top-to-bottom company. It can design and manufacture its own chips, it can design and manufacture its own planar boards, and so on. This leads to a very precise understanding of what constitutes quality.

Another element in the mix: IBM is a large company, and different divisions can share expertise where that makes sense. The current Intellistation product line is a good example of this collaboration. There is substantial intellectual overlap in the design of PC-family

workstations and PC-family servers. According to Gary Wiseman, who works in IBM's Raleigh performance lab, this pays off handsomely when the convergence passes the 80 percent point or thereabouts. For example, the new Intellistation motherboards were co-designed with the server team.

Even "finishing touches" benefit from the collaboration. Intellistation cases now feature tool-less entrance - an ease-of-access feature commonplace to systems designed for use as servers.

I specifically asked to look at one of the more modest systems, jazzed up a bit, but still at the low end of the Intellistation spectrum. What arrived was an E Pro fitted with a 1GHz Pentium III processor, 256mb of SDRAM, an NVIDIA GeForce2 MX 4x AGP display adapter and ATA/100 15GB/7,200rpm hard disk, running Windows 2000. The monitor was IBM's 18" analogue LCD flat panel monitor (see sidebar). Everything was a handsome charcoal grey; this E Pro was supplied in a mini-tower with a six slots available (a desktop case with a smaller card bus is available). The machine sported *three* full-size brushless fans - one for the power supply, one for the processor, and one just to make sure that there is no heat buildup. This was a typically thorough IBM design job, with nothing to be faulted. I was a bit surprised at the (largely empty...) mini-tower case; smaller is better, and I suspect that a lot of users would be just as happy with a smaller box with fewer slots.

The short story: It will be painful sending this system back.

I used KaratCAD's implementation of the AutoCAD OEM engine for some quick drawing tests (it was handy at the time...). I plugged the system into the network and surfed on over to the Internet for some challenging stuff to download and muck around with.

There simply was *nothing* slow about this system - software loading, drawing, screen updating, everything simply *snapped*. Purely subjective comparison of front-of-screen performance (the only kind that interests me) with that I get on my present "standard" (a reference machine based on AMD's 650MHz Athlon, with 128mb SDRAM, fast hard drives and a speedy NVIDIA graphics card) suggested that the speed difference was above the least-noticeable-difference threshold.

This superior performance was no surprise, considering the ample memory for the application, and the clearly tight integration of the various elements. Other than the NVIDIA card, all the other elements, including networking, were integrated onto the system board. On the other hand, I am accustomed to IBM systems being a bit, well, *stodgy*; there was nothing *stodgy* here.

The machine I used was actually a prototype for the entry-level series of E Pro Intellistations; it carries a pricetag (absent monitor) of US\$2,559.. The most basic E Pro model (800MHz Pentium III, 64mb SDRAM, simpler hard drive) starts at US\$1,485..

The rest of the E Pro line adds second-generation RAMBUS memory support to the mix. The M Pro and Z Pro series upgrade the support-chipset and expands capacity for more memory, dual processors (respectively, Pentium III and Pentium III Xeon). Pentium IV availability is planned.

[Expect the initial P4 machines to perform with a bit less crispness than comparable P3 machines, according to IBM sources. The Pentium IV is a bit more "RISC-y". Software will have to be re-compiled, perhaps even performance-tuned, to take advantage of the new chip design. It may make sense to stay with "legacy" P3 systems until

you turn over software as well, if getting the best turn of speed from your high-megahertz machine is an interest.]

Okay, so IBM has a nice box. Is this a market-making difference. Yes, but there is more. IBM has some really spectacular service options, and some of them are (good grief!) free.

IBM understands business needs; they largely set the standards for service to corporate clients. Rolling out a new department-wide system? IBM understands this process and is proud of its support capabilities. The indications are, some of the rough places that had developed when the company was suffering hard times some years ago are pretty much repaired. One particularly nice feature in a technology marketplace run wild: IBM makes a specialty of planning transitions from older-to-newer technology (no surprise, but it is nice to see it systematized).

What about ordinary folks? In addition to call-in support, there is the by-now usual Web-based support. Again, IBM has thought of a better way. Call in for support, and your call gets qualified, and escalated from a simple-solutions, to more-complex-solutions, to system-engineering-solutions. Use the Web-based support system, and your question goes directly to the system-engineering crew, according to IBM's Rick Rudd.

Add to this, IBM certifies hundreds of top software and hardware products, tested to work with its products. Buy an IBM system and hardware or software certified to run with it, and IBM can provide one-stop support for both its own branded product and the add-in/on. [Usually, it can provide support for other stuff, too.] Can you say, "no run-around"?

Well-made, really hot hardware, coupled with a support model that aims to keep customers: This is a marketing model that one could get comfortable with.

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SIDEBAR - Flatpanel LCD Monitor

If the IBM Intellistation was neat, the LCD monitor - with the rather uninspiring (strictly Borg) designation "T-series" - was what made me drool.

IBM has been telling folks about the flatpanel future for nigh onto two decades (I remember the company's gas-plasma-screen-hanging-on-the wall ad). For the last few years the company has been selling analogue and digital flatpanel LCDs in 15", 17" and 18" models. The end of October brought the introduction of the company's first "hybrid" (analogue/digital) model.

Since IBM sells all three variations on the theme, what does it recommend? In conversation with Tim Martin, product manager for the T-series, it depends mostly on what the future program is.

Analogue monitors take the analogue signal and convert to digital in any case. For most users - CAD users, office users and so on - the slight color shift that may take place should be below the least-noticeable difference threshold. In a purely digital environment, where both display adapter and monitor are digital, there is no conversion, so there is no shifting. In short, this is a merely æsthetic matter - the informal polls taken seem to get a 50-50 response as to which color-values are better.

The obvious advantage to hybrid flatpanel monitors is their accommodation of both analogue and digital input. If the idea is to

keep the monitor while upgrading the system unit with its display adapter, this can be a significant advantage.

Flatpanel LCD monitors are not cheap; the reason, according to Martin, has to do with manufacturing. The "blanks" on which the screen areas are printed (literally; it is a photolithography process) can accommodate only so many units. The size of the blanks are still determined, so it seems, by screen sizes popular five or six years ago for notebook computers (where, of course, this technology first became popular). Larger screen sizes, which use the area on the blank less effectively, result in more waste and so on.

Consequently, an economy 15" LCD panel costs close to US\$1,000.. The 18" T86A analogue monitor I used comes in at about US\$2,800.. Not cheap, but very cool - and prettier than most standard CRT monitors.

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