Getting Connected
Sometimes Hardware is Better than Software

BY
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Where computers are concerned, it is generally better and easier to do things in software. Aten Technology's KVM switch goes a long way toward defining a common case where doing things in hardware makes a better solution both technically and in terms of price.

The problem that I needed to solve, that brought me to Aten, was simple: I have several computers, but limited space for keyboards, trackballs and most especially, monitors, on the bench. It seems this is not my problem alone; I've run across a number of small shops where one person is both system administrator for a department or even the whole business, as well as having other duties. Easily switching the local screen-and-keyboard setup between, say, server and local workstation computer is an issue. A switch sharing these peripherals among several computers could make life easier (not to mention, less radiation-intensive…).

Life is more complex: Some of the systems on the bench run Linux all or part of the time, and Linux has limits as to what it can "see". One system has a tablet connected; it draws power from the keyboard socket. I use a multimedia keyboard – that's another power issue. Any switch I might adopt had to do things *my* way, and I'm fussy.

KVM (keyboard/video/mouse) switches have been around for awhile, but they have been fussy beasts. Stick your nose in the local parts-shop and chances are, the *knowing* salesperson will tell you about system-lockups.

Aten Technology seems to have solved all these problems, for the most part.

The switch I've been using is Aten's four port MasterView Lite. This is a mid-range device in the Aten lineup, at US$150. The rectangular box is about an inch high and three-by-six inches square.

Plug the monitor, keyboard and pointer into the shared port along one of the short ends of the switchbox. Connect the computers to be controlled to the switchbox using the supplied color-coded cables (important: a PS/2-type mouse plug looks just like a PS/2-type keyboard plug). Boot systems and pretty much move right along. A pushbutton on the other short end of the switchbox rotates the switch among the different stations; LEDs at each place provide a visual clue as to which station is connected (important, if the "desktops" on one's systems look pretty much the same).

Your desk is like mine, and yet another switch to find is a problem? The switch uses hot-keys. Press left-control/left-alt/left-shift (or the right-hand set — has to be matching, in any case) and *release* them; press the number of the system you want; hit enter. Bingo, the connection changes and you're looking at the correct desktop. It took about three tries for this to become automatic; I gladly gave up reaching for the switch.

First question: Did systems lock up? Answer: Yeah, on a couple occasions, especially when I was really trying to confuse machines with some rapid back-and-forths and also when a Windows machine was running its screensaver too long or had shifted to power-saver mode (turn that feature *off*; Windows doesn't really like it, no matter what Uncle Bill says). But in normal service, this was not an issue; even fussy systems booted correctly and displayed no special problems that I could trace back to the switch.

I *did* have problems with my favorite trackball, Itac's superb Evolution Mouse-trak. Sometimes at bootup, the mouse behaved badly, skittering all over the screen. This problem traced to an extension-cord I used to allow the trackball, which has a shorter-than-normal cable, to reach to where I had the KVM switch – I think. The problem was erratic enough, and occurred infrequently enough, that I was not overly inconvenienced or concerned. The problem did not occur when using a Microsoft Intellimouse.

I had no trouble at all getting power passed to my tablet and keyboard-based sound system. The Aten MasterView KVM kept the computer-to-keyboard states, including power-states, perfectly during switches among machines; where the tablet driver was installed, it worked like a charm.

There simply is nothing technical to dislike about this switch. The company says it will work, and even in my stressed-out bench-test setup, it does so with remarkably few glitches.

I think I might have chosen one of the company's pricier MasterView Plus or Pro (rackmount) models. These have a more conventional connection-on-back, control-on-front layouts and might be more convenient to install. This is not, however, a performance matter, except where more than four systems are being controlled (I understand the more costly models include logic to manage possible problems when managing more than four systems).

Briefly, the Aten MasterView Lite switch I used is a good solution — and presumably, its cousins in the Masterview lineup are as good. It is easy to install because it is *completely transparent* to the rest of the hardware. That's better than plug-and-play. The cost of the unit I've been using is modest; US$150. for the switch and the fancy three-way molded-together cables is a solid value (you'd pay nearly half that for the cables alone, in any case).

Sidebar – Other Hardware Solutions to Common Problems

This is not the first time I've found a relatively low-cost part that simply made life more convenient. PI Engineering made its mark with the Y-mouse tablet/mouse connector; this let me share my serial port between a trackball and a graphics tablet (see CADSystems XXXXXXXX). PI Engineering has similar smart hardware for mounting dual monitors, dual keyboards, and custom programmable hot-key arrays. Neatest hack from that company: How about a pedal-board for frequent commands?

Aten Technology takes this approach along in different directions. The company has a number of very well conceived connection solutions aimed at IT pros in various categories, as well as end-users in SOHO setups.

The company's USB offerings may turn out to be the most interesting products in the lineup. USB (universal serial bus) is a scheme for connecting a lot of slow-to-mid-speed devices to a single port using a single interrupt-request (IRQ). IRQs always being in short supply, this is a good solution. Apple's Macintosh has made the most effective use of the strategy, having developed a sort of precursor in the old Apple Desktop Bus, and now extending the whole concept in its Firewire. [Adopted as IEEE 1394, Firewire posed some licensing issues for companies wishing to use Apple's technology. A licensing pool, with a 25-cent per machine levy, seems to have

resolved the issues. However, USB proper continues to evolve and it is not clear yet what kind of convergence will develop, leading to a single, relatively high speed serial connection.]

Aten Technology has a range of USB/Firewire extension products. The basic product, the company's MiniHub (now called "fun-size" and available in iMac-like colors), is a stackable, cascadable four-port hub. A couple of these make the back-of-machine USB ports on my systems accessible and up the number of devices from two to eight. I haven't got that many USB devices — but Aten sells converters for common items like printers and modems, from "standard" to USB.

If you get the sense I like what Aten Technology is doing, you are right. The company may have more accurately gauged the way the small-computer business is going than other, larger companies have. Simpler machines, without open-the-box-and-stick-in-a-card options, are beyond the prototype stage. It isn't just the iMac; Hewlett-Packard is actively promoting such machines for the office. It is not hard to envision what amounts to a return to the days of the external-peripheral — lots of fairly cheap, small boxes that stack together to make a system. Want a better display processor? It's a small box that stacks on top of or beside the main processor, and daisy-chains to it. Something like that is easy to envision, relatively cheap to make and,

with the kind of intelligence showing up in operating systems, trivial for even a novice to install.

Aten Technology will be making the pieces that allow you to connect the bits smoothly, and salvage older legacy hardware. Cool.

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