Case Study:

Walt Disney Feature Animation

codeweavers

Walt Disney Feature Animation: Benefiting from Open Source Business Models

Overview: With the help of CodeWeavers' CrossOver Office product running Adobe Photoshop, Walt Disney Feature Animation was able to hasten its move towards a Linux-centric production environment.

Walt Disney Feature Animation has begun moving decisively towards a Linux production environment, induced by Linux's cost benefits, as well as its clean fit with the studio's infrastructure.

Walt Disney Feature Animation is the oldest, and most famous, animation studio in the world. Operating from two physical locations (Orlando, Florida, and Burbank, California), the studio is constantly pushing the limits of what can be done with computer animation technology.

Long a bastion of Silicon Graphics IRIX-based applications, in 2001 the studio began exploring alternatives to its Unix workstations, in reaction to SGI's inability to offer a compelling cost/performance story in comparison to Intel-based systems, as well as the increasingly precarious position of SGI within the high-end workstation market as a whole. As a result, Disney benchmarked a wide range of alternative platforms, including OSX-based Macintosh solutions, Linux running on a number of hardware platforms, FreeBSD, and Windows.

As a result of this assessment, it was decided to begin moving the bulk of the studio's 600 production workers from IRIX to a Linux-based environment. Disney was attracted to Linux for its cost/performance benefits, particularly when paired with Intel hardware. Linux was also a good fit for Disney's in-house software development environment. In addition, Linux fit in well with the studio's server infrastructure, which is built primarily around Solaris-based systems. As a result of all these factors, the movement to Linux on the desktop began in earnest in late 2001, and accelerated in 2002.

Providing support for Adobe Photoshop was a critical hurdle to overcome in moving to Linux.

However, there remained a number of obstacles to making a complete transition to Linux. In particular, the studio relies heavily on Adobe Photoshop for a wide variety of production tasks. Approximately 100 production workers used Photoshop either occasionally or intensively. It was vital that these users be accommodated as economically as possible, but also with as little disruption to their workflow as could be achieved. Making

workers pick up and move to shared workstations, for instance, was not acceptable in terms of lost production.

What would have been most appealing, of course, would have been a native version of Photoshop under Linux. Unfortunately, discussions with Adobe led nowhere in this respect. In the words of Feature Animations' Technology Director, Jack Brooks, "I can see where Adobe is coming from in this respect. Are they going to crank out a Linux version for the sake of a hundred licenses at my studio? No way—at least, not at this point."

Dedicated hardware and Windows emulation solutions were expensive, and created support issues that Disney didn't need.

Disney then evaluated three possible alternatives for achieving this goal. Running Photoshop on dedicated Macintosh OS X machines was discarded as being too costly, as it would have required purchasing (and maintaining) a hundred new Mac workstations. Furthermore, this approach would have been a step backwards in the studio's attempts to move towards a common production platform.

Using free or shareware painting technology (such as the Gnu Image Processor—GIMP) was more economical, but met with strenuous resistance from production workers who were already proficient in Photoshop. Furthermore, in the words of Jack Brooks, "GIMP just wasn't quite there yet. And the prospect of switching to Linux while simultaneously ramming the GIMP down people's throats didn't seem terribly appealing."

A third alternative—that of running VMWare emulation software on each of the Linux machines in order to host Photoshop—had the benefit of carrying a lower acquisition cost than using dedicated Macintoshes. However, VMWare brought difficulties of its own. The dual-booting required for VMWare "didn't seem like the right way to go," said Brooks. Not only would Disney then have to support yet another environment and configuration (Windows) on a hundred workstations, it would also have to develop an extensive system of Samba mounts to give these workers access to Disney's 15+ Terabytes of production information. Finally, software performance under VMWare was notably inferior to that offered by the Macintosh option. All in all, Brooks felt that the prospect of implementing VMWare seemed likely to create "a support nightmare."

A coalition of industry players came together to provide CodeWeavers the financial incentive to support Photoshop under CrossOver.

It was at this point that CodeWeavers came to Disney with an offer to create a fourth alternative. Brooks was already familiar with Wine as a technology. The problem was that the amount of money that Disney could commit to CodeWeavers for supporting Photoshop was less than CodeWeavers needed to undertake the project. However, CodeWeavers was then able to assemble a coalition of interested corporate parties, including Disney, each of which contributed a sum of money towards getting Photoshop to work under CodeWeavers' CrossOver Linux solution.

Within a matter of a few weeks, CodeWeavers had Photoshop 7.0 running cleanly and stably under CrossOver. CodeWeavers announced official support shortly thereafter for its 2.0 release of CrossOver Linux. CodeWeavers has also subsequently maintained ongoing support for more recent versions of Photoshop as CrossOver has progressed.

The result has been manifold benefits for Disney. Disney's monetary contribution to the project was still less than it would have spent on a 100-seat VMWare / Windows XP implementation. Performance of CrossOver Linux has also been "very good", according to Brooks—better than VMWare, and only being edged out by high-end Mac OSX systems for very complex operations on extremely large files. In addition, CrossOver's native integration with Linux means that production users running Photoshop enjoyed the same sort of seamless NFS access to what Brooks refers to as Disney's "data factory"—its multiple terabytes of ever-changing production data—that they were used to on their IRIX workstations, all without having to implement a new Samba scheme.

In addition to CrossOver's technical benefits, working with the open-source business community has offered Disney flexibility and responsiveness.

In addition to the technical benefits, Brooks also sees advantages to the business model that led to his working with CodeWeavers. "In the world of open source software, it's pretty easy to find people to do work for you," Brooks said. "Smaller companies like CodeWeavers can make a healthy business from offering customizations around their software products. It makes sense for them at this scale." As for Adobe, Brooks thinks CrossOver support is a good deal for them as well. "They sold more licenses to us as a result, we got off their backs, and they didn't have to make the effort themselves—that's a win-win situation, I think."

As for the future, Brooks sees Disney continuing down the path towards a production environment that he describes as "vastly Linux-centric." "Mac OS X and SGI workstations, and even a smattering of Windows machines, will continue to exist here and there for certain tasks. But the majority of the heavy lifting will be done on Linux."