

DreamWorks Feature Linux and Animation

Contributed by Henry

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We visited the Glendale studio where the major animated motion picture, Spirit, Stallion of the Cimarron is in production. Spirit, the story of a wild mustang's adventures in the untamed American West, is due for domestic release in the summer of 2002.

Some wonder how Linux will dislodge Windows on the desktop because leading desktop applications such as Microsoft Office (Word, Excel and Access) aren't there. But, if you are a motion picture animator most of your everyday tools are already available on Linux, and the number being ported or even produced specifically for Linux is increasing at a remarkable rate.

DreamWorks has followed three paths to Linux: new development, porting and third-party-vendor porting. Head of technology Ed Leonard says, "To dramatically reduce costs was one of the big motivating factors in moving animators to Linux. But, it is our animators' productivity that really counts. Telling the story well, not the underlying technology, is what matters to us." Using Linux saves time for the animators because Linux PC performance is so much faster than the five-year-old computers being replaced, even though those SGI IRIX workstations were awesome machines. Leonard adds, "Microsoft software continues to play a key role in our overall business, but Linux is particularly well suited to animation production pipelines."

An animator's desktop is not the same machine that an executive or secretary would have. The animator needs a high-performance workstation with a dual-head, high-performance graphics system and specialized software for motion picture production. To typical computer users, the animator's software tools may be unfamiliar.

[Click here](#) to walk through the DreamWorks production cycle and see how Linux is used.

Table 1. Animation Types and Methods

An animated feature film starts with a story idea. Production takes two years. In the preproduction phase called visual development (vizdev) many different forms of art, including oil paintings, are created to capture the essence and look of the film. Some works of art go beyond the general level of detail and realism that will be in the finished film.

Similar in appearance to a comic book, a storyboard is sketched by hand on paper to help visualize key production shots. Then, an animatic movie is created by artists using custom plugins in Alias|Wavefront's 3-D animation package Maya. Although lacking the quality of finished animation, the animatic shows the context for the scene, the camera view and helps with character development. Using the animatic, the production staff can visualize parts of the film in motion before it enters production. None of this preproduction content will make it into the film. It is used as a guide for producing the real film later.

Scene planning determines the characters, backgrounds and effects to be built. Animation, backgrounds and effects are separate departments. The pieces will be brought together later using compositing software.

For character animation, a scan of a paper sketch is done using ToonShooter. Production software lead Derek Chan explains, "ToonShooter is an internal tool we wrote for Linux. It captures low resolution 640 x 480 line art that the artists use to time the film." Created more than a year ago, this Linux capture stand software is deployed in three animation departments. Chan says, "Demand was keen for this Linux software, and we delivered it ahead of schedule. DreamWorks has 60 units in production now."

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