



DreamWorks Animation's *Kung Fu Panda*

HP has helped DreamWorks Animation create animation film feats from "Shrek" to "The Bee Movie." Now, with the help of HP technology, DreamWorks Animation is taking animation to new heights to deliver the next big thing in the media and entertainment industry, the summer 2008 release of "Kung Fu Panda." For this latest project, HP technology helped animators solve artistic challenges that ultimately brought the story of "Po" to life.

It Takes a Village to Create a Panda

- Including voice actors, 448 different people put more than 21,442 man-weeks into the film. That's 107, 210 man-days or 857,680 man-hours.
- It took a total of 391 artists to create Kung Fu Panda (total crew minus production staff and voice talent). Kung Fu Panda was in production for 4.5 years (from Fall 2003 to Spring 2008).
- The Kung Fu Panda Animation department is comprised of animators from around the globe, including artists from the USA, China, Canada, France, Italy, Spain, Ireland, the United Kingdom, Mexico, Philippines, Japan, Sweden, Belgium and Israel.
- Every time a scene was finalized in Animation, the animator received one fortune cookie (with a customized fortune inside).
- The animators' first pass shots of kung fu were choreographed in 2D before being animated in CGI.
- It took a combined 54 systems (including rockets, trails, lights and emitters) to create the single effect of Po riding the rocket chair into the stadium.

Bringing Po the Panda to Life

- The weirdest animation control was for Po's uvula.
- Jack Black, the voice of Po, stood during recording session so that his physical activities would enhance the performance with subtle nuance. The animators loved capturing and transferring his subtle vocal and physical work (breathing, exerting effort, fumbling) to Po onscreen.
- Po has a special "fighting fist" control that he only uses when he's engaging in kung fu.
- Po's cheeks were rebuilt during the film to allow him to stuff his mouth with more food!

Get Out Your Abacus

- The Jade Palace is made of 88,100 different surfaces/pieces.
- There are 22,388 scrolls in the palace scroll room.
- The prison is over 3,000-feet deep.
- Master Crane has 6,019 feathers on his body.
- Viper has 120 bones along the length of her body.
- The total amount of individual confetti pieces used in sequence 600 (the scene where Po is chosen as the Dragon Warrior) is exactly 1,040,229!
- Number of tiles Po sends raining down on Tai Lung, who climbs those tiles: 8,260 tiles total.
- Number of arrows that shower down on Tai Lung during his prison escape: 1,500 arrows.
- When Po and the Five eat together, there are 64 noodles in each bowl.
- Number of acupuncture needles in Po's back while talking to Tigress: 133.
- Number of particles that compose the disintegrating chair that Po blows up with fireworks: 953,593 particles.



How HP Powered the Making of Kung Fu Panda

Throughout the film's development, HP technology helped solve artistic challenges that enabled animators to bring the story and images they envisioned to life. With crowds full of fur flying, feathers flapping, and cloth flowing, few other systems would have been able to keep up as these simulations require fast turn around to work with artistically.

- Over 400 HP workstations were used in the production of Kung Fu Panda. The DreamWorks Animation standard configuration incorporated HP's High Performance xw9400 Workstation, which proved to be significantly faster (as much as 50% for some applications) than their predecessors. The additional processing cores, memory, and option drives enabled artists to effectively work on multiple shots simultaneously.
- The HP workstations delivered the responsiveness demanded by artists. The freedom to use camera motion is particularly important in a kung fu movie, and Kung Fu Panda used the most moving cameras in a DreamWorks Animation show to date.
- HP's ProLiant DL145 servers, BL465c server blades, xw9300 and xw9400 workstations enabled artists at DreamWorks Animation to bring audiences an experience with an unparalleled scope and scale.
- Separated by 350 miles, HP's cutting edge video telepresence solution, the Halo Collaboration Studio, brought the Glendale, Calif., and Redwood City, Calif. teams virtually into the same meeting room.
- The Kung Fu Panda renderfarm – for the first time featuring HP's BL465c blades – is the largest and most powerful renderfarm ever used in the production of a DreamWorks Animation film. The film required over 24 million render hours from the HP-based renderfarm – four times as many as the original "Shrek."
- During the production of Kung Fu Panda, the DreamWorks Animation story department actively used HP printers and scanners to aid in the hundreds of story pitches. Many story boards were created digitally and printed via HP printers such as the HP DesignJet Z3100 Photo Printer with DreamColor Technology.

The HP/DreamWorks Technology Partnership

In 2001, DreamWorks Animation and HP formed a unique technology partnership to explore new creative frontiers. The alliance designated HP as DreamWorks Animation's preferred provider for core technology. Through the years, HP and DreamWorks Animation have unveiled innovative technologies for projects such as off-site animation rendering and remote collaboration. Below is a timeline of the major milestones.

2001: World's first production 3D Linux workstation - one year ahead of the competition

2002: World's first all Linux, all HP digital film (Sinbad: Legend of the Seven Seas)

2003: World's first successful utility computing service for rendering (URS)

§ URS provided a simple, flexible and scalable solution to manage the enormous amount of computational power needed to render high-quality film animation.

§ Millions of Frames of Shrek 2 and Madagascar were rendered at HP Labs

2004: World's first game-changing conferencing technology: HP Halo

§ To address the need to connect geographically dispersed teams and provide an unprecedented level of collaboration capabilities

2005: World's first Nvidia + AMD workstations on Linux

§ DreamWorks Animation enables HP's first non-Intel workstation on Linux

2007: World's first highly integrated technology system that delivers digital color consistency across a series of devices.
HP DreamColor



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