AMD improves efficiency of special effects development for “Moon Man”

The high-performance AMD Ryzen™ Threadripper™ PRO processor enabled MOREVFX to accelerate post-production workloads for "Moon Man."

AMD THREADRIPPER PRO

CLIENT

MOREVFX

INDUSTRY

Post-production special effects

CHALLENGE

To render and preview faster and increase efficiency when working with computationally intensive movie effects

SOLUTION

Deploy workstations with AMD Ryzen™ Threadripper™ PRO processors

RESULTS

Greatly improved project efficiency and reduction in loading times by up to 30%

AMD TECHNOLOGY

AMD Ryzen Threadripper PRO processors

The desire for new technology, new hardware and new equipment in the film and television industry has never been stronger. As the production of special effects becomes more demanding and difficult, the processors being used must enable peak efficiency for even the most computationally intensive tasks. This is particularly evident in the blockbuster “Moon Man.”

“Moon Man” is a science fiction comedy film released this year. While still in theaters, "Moon Man" has already grossed RMB3 billion, making it one of the most successful Chinese films of the year. High-performance processors from AMD played an important role in MOREVFX’s production of “Moon Man.” In particular, AMD Ryzen™ Threadripper™ PRO processors, with powerful performance and professional application advantages, allowed the artists to improve efficiency during the special effects production process.

“The computing power that AMD processors bring is critical in our projects.”

Zhang Fan, director of visual effects for “Moon Man”

High standards, heavy computation

The special effects of “Moon Man” are used most notably in the realization of the lunar surface, the lunar base, the Earth and meteorites from the perspective of space, and the virtual creature Diamond Kangaroo. To ensure a vast effect and rich perspective, MOREVFX placed the entire moon surface in the UE5 virtual engine environment for rendering. MOREVFX also developed additional tools and upgraded the virtual engine to make it more compatible with film production.

Close-ups of the environment on the moon surface are very hardware intensive. For example, in a scene where the hero is running on the moon, there is a close-up of his foot stepping on the moon surface and jumping up. The moon dust floating in the air and the detailed interaction of the hero’s foot pushing off the moon surface are special effects that demand exceptionally high processor performance.

The production of bionic creatures has always been the most difficult part of special effects production, and the ability to do a creature well is often the most direct benchmark of the capabilities of a special effects company. In the production of special effects for “Moon Man,” the production of Diamond Kangaroo Gangzi, which accounts for 20% of the total amount of special effects, was definitely the top priority.

In order to emulate a real kangaroo and its full-body motion and expressions, MOREVFX used a total of 1,331 target bodies. Diamond Kangaroo has roughly 50 million hairs, growing in different directions and responsive to each muscle movement. The hair effect of the kangaroo has also been iterated many times, constantly modifying the material and light chasing parameters.

Achieving realistic results when producing the Diamond Kangaroo required immense resources and computing power. Rendering kangaroo close-up shots of each frame took about 20 hours. For some close-up shots, the rendering of each frame even required 2-3 days. The enormous amount of VFX production work involved more than 600 people. The film’s incredibly realistic scenes of the moon, space, and bionic creatures included nearly 2,000 special effects shots. Accelerating the VFX phase of production was the key to improving the film’s overall project efficiency.

Significant reduction in processing time

MOREVFX used many workstations powered by AMD Ryzen™ Threadripper™ PRO processors in their VFX and asset departments for "Moon Man." Before "Moon Man," these two departments used dual-CPU workstations that did not have the computing power to load certain scenes and resulted in slow loading and rendering times. "But after we switched to the AMD Ryzen Threadripper PRO processor, the time was much shorter and then it also improved the production efficiency for the artists." said Dang Shidong, senior operations and maintenance engineer at MOREVFX.

"If it's just the performance of an ordinary workstation, for some very large effects scenes, there will be a long read time each time we open or review, which will greatly delay our production time and waste the time of our artists and directors in their review," said Wang Dongbiao, senior operations and maintenance engineer at MOREVFX.

"Once we switched to the Threadripper PRO processors, we were able to reduce the time by 30% or more."

Dang Shidong, senior operations and maintenance engineer at MOREVFX

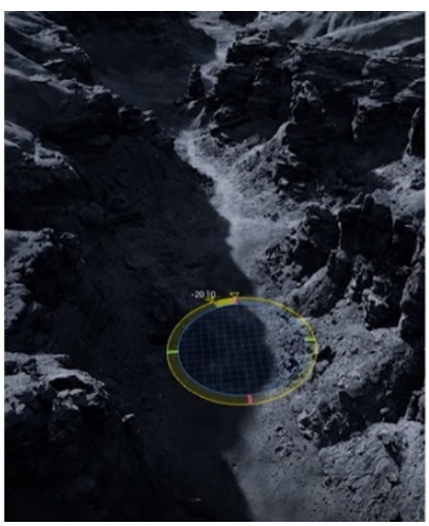
In the film "Moon Man," there is a scene where the lunar rover is running on the moon. This scene took up to a half hour to load with an ordinary workstation. "After switching to the AMD Ryzen Threadripper PRO processor, this time can be reduced by up to 30%, and the final production and rendering can also be reduced by up to 30%," said Shidong. "The improvement in efficiency is huge. After the artist's production efficiency is improved, the pressure on him will be reduced a lot, which will improve his production level and the overall project efficiency."

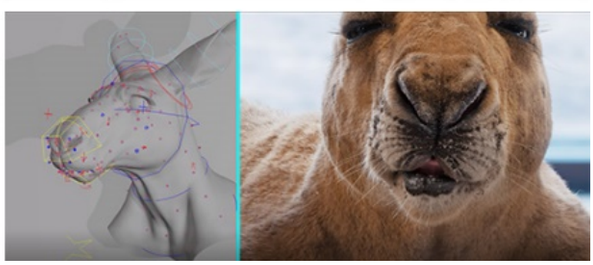
Changing the way artists work

With AMD high-performance processors, the artists at MOREVFX found it much easier to produce the kangaroos using new techniques. Artists were able to check more details immediately after rendering each frame, particularly for scenes involving intricate hair movements. Such visibility resulted in greater efficiency for MOREVFX artists working on "Moon Man."

MOREVFX produces many large-volume scenes for various projects. In the past, artists had to consider how to optimize computations for time saving. They often had to split production between machines, which was both troublesome and time-consuming for artists. Now, the effects are the top priority and can be completed more efficiently on a standalone machine that allows artists to operate and see results immediately.

"When we were testing with the AMD Ryzen Threadripper processors, the results were up to twice as efficient as our previous workstation. And now we're starting with the new AMD Ryzen Threadripper PRO 5995WX processor, which is much more powerful than the previous generation of Threadripper processors," Dongbiao said. "The 5995WX processors we are testing now are up to 20% to 30% faster depending on different scenarios, and even up to 100% faster in some cases. In future projects, we hope to be able to use computers powered by these processors in large quantities, which will greatly improve our efficiency."





About MOREVFX

MOREVFX is a leading visual effects company in China known for its artistic creation and technical innovation, with visual effects design and production as its main business. MOREVFX is known for "Creating Chinese Pop Culture in the Digital World", and aims to become a flagship digital entertainment content development and production company that integrates culture and technology. Based on the production of film visual effects, the company leads the development direction of Chinese visual effects, whether in technology development, visual creation, production process, visual effect company management process, etc., and has won the Golden Image Award for Best Visual Effect, Golden Horse Award, Asian Film Award and other nominations.

About AMD

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