



AMD Ryzen™ Threadripper™ Processor Improves Game Development Innovation Efficiency of “Black Myth Wukong” R&D Team

With the help of AMD Ryzen™ Threadripper™ processor, the “Black Myth Wukong” research and development team has greatly increased their efficiency.



PARTNER

Game Science “Black Myth Wukong” Team

INDUSTRY

3D game development

CHALLENGE

Compute-intensive tasks on a single machine take a long time

SOLUTIONS

Deploy workstations with AMD Ryzen™ Threadripper™ processors

RESULT

Significant improvements in the efficiency of C++ compilation iterations, content cooking, and solving.

C++ code construction/compilation and resource versioning are important elements of developing 3A game masterpieces. Unlike more GPU-dependent work such as 3D graphics rendering, C++ compilation and versioning resources are largely dependent on the multi-threaded performance of the CPU rather than the GPU, especially when developers work on a single machine.

When AMD China's engineering team recommended the AMD Ryzen™ Threadripper™ workstation processor

to the R&D team of “Black Myth Wukong,” one of the most anticipated Chinese original 3A single-player game masterpieces, they helped solve the bottleneck problem of single-player development efficiency that plagued the R&D team and enabled the dream of efficient creation to finally become a reality.

“Black Myth Wukong” is an action role-playing game based on “Journey to the West” and Chinese mythology. It was created by a team from Game Science, an internet company that focuses on creating high-quality games and hopes to combine the fun and sensibility of the game with the seriousness and rigor of science.

Its players will experience rich battles and plots in a realistic Oriental magic world. Expectations of players around the world have soared since demo clips of the game's live test collection were released, but the development of 3A-level single-player 3D games like “Black Myth Wukong” requires extensive manpower and material resources for plot, gameplay, and graphics innovation.

“We use the Unreal Engine 5 for development. In the development pipeline, we rely heavily on C++ compilation and resource cooking tasks.

The pain point we face is that some stand-alone compute-intensive tasks take a long time,” says Zhao Wenyong, technical director of “Black Myth Wukong.” Reducing time consumption and improving efficiency is the R&D team's primary concern.

It is impossible for every developer on the team to be in the distributed acceleration office environment all the time. When there is no distributed acceleration scheme, developers hope to quickly improve computing efficiency in a stand-alone environment. When using Visual Studio™ 2019 to compile a large, time-consuming project, the developers can take advantage of their multi-core CPU to achieve parallel compilation.

“The AMD Ryzen™ Threadripper™/ Threadripper™ PRO processor solution is significantly more efficient than the R9 5900X's engine compilation efficiency, resource cooking efficiency, and the efficiency of a large number of other parallel computing tasks in the project.”

Zhao Wenyong, technical director of “Black Myth Wukong”

This kind of scenario is highly dependent on CPU, so the developers chose to work with the AMD Ryzen™ Threadripper™ workstation processor to achieve simple multi-core parallel acceleration. "In some scenarios, the efficiency improvement brought by the new workstation is even as high as 100%," says Wenyong.

"I would recommend the AMD Ryzen™ Threadripper™/Threadripper™ PRO processor solution to my peers, for example, when they have a time issue with compiling for a large project or when they need to build frequently during the acceptance period."

Zhao Wenyong, technical director of "Black Myth Wukong"

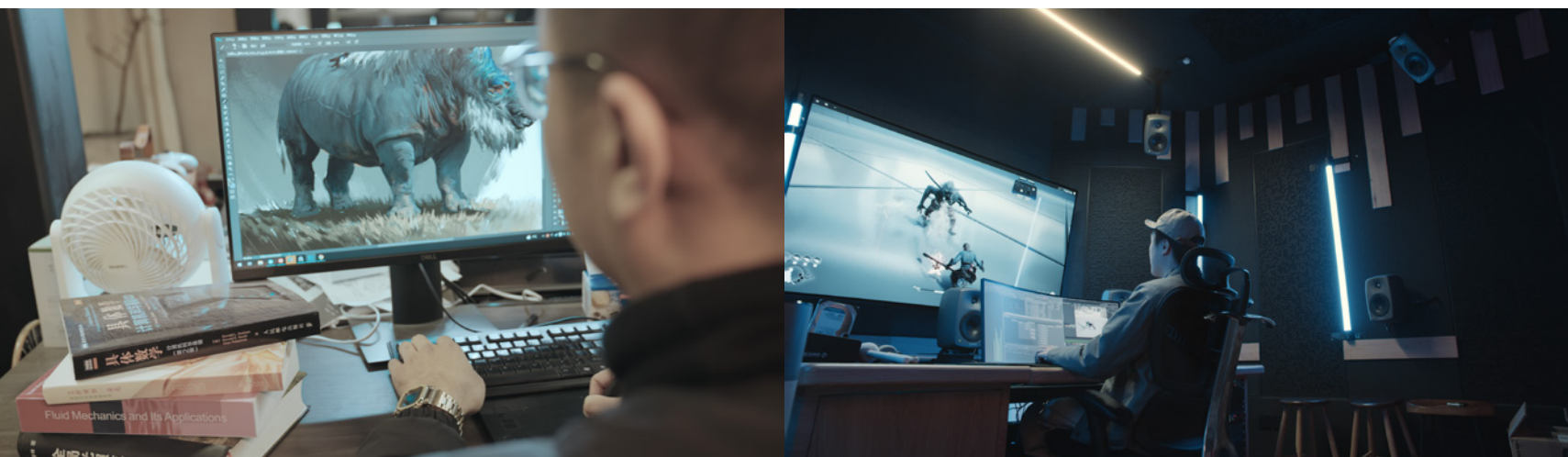
Early data from the "Black Myth Wukong" team shows that when the full Unreal Engine™ source code is compiled to build an installation version of the Windows platform using AMD Ryzen™ 9 5900X CPUs, the compilation process takes an average of 130 minutes. When the CPU is upgraded to an AMD Ryzen™ Threadripper™ 3990X processor, the average time is reduced to about 70 minutes, increasing the efficiency by more than 85.7%. The content cooking process using an AMD Ryzen™ 9 5900X CPU

takes about 100 minutes. When the CPU is upgraded to an AMD Ryzen™ Threadripper™ 3990X CPU, the average time is about 50 minutes, resulting in an efficiency improvement of 100%. Modeling has always been an important part of the game

"At present, the AMD Ryzen™ Threadripper™/Threadripper™ PRO CPUs solution has fully met our computing needs, and we will try it first when we encounter new computing challenges in the future."

Zhao Wenyong, technical director of "Black Myth Wukong"

development team's workflow in Autodesk™ Maya™, but the "Black Myth Wukong" workflow extends beyond just modeling to rendering, simulation, and solving, which requires additional cores. Now, the team's development efforts require a well-balanced processor that can provide many cores/threads, as well as efficient single-core performance for modeling. "The single-chip ultra-multi-core AMD Ryzen™ Threadripper™ provides a large number of cores and threads, while maintaining excellent core speed, especially in the process of solving, which significantly improves work efficiency," says Wenyong.



About Game Science:

Game Science was founded in 2014 and currently has studios in Shenzhen and Hangzhou, China. The start-up team from Tencent Mutual Entertainment Self-Research Studio has an average working experience of 13 years and an average cooperation time of more than 10 years. They firmly believe that the continuous innovation of the core play method and the long-term deep cultivation of the subdivision field can harvest the real user reputation. Game Science only makes products that developers can play, love to play and are willing to recommend to friends. The company's vision is to impress the world with orthodox Chinese cultural products.

About "Black Myth Wukong"

"Black Myth Wukong" is an action role-playing game with based on "Journey to the West" and Chinese mythology. Players will experience rich battles and plots in the real Oriental Magic World. Game products will adopt the buyout payment model, support global multi-language, and be sold on all platforms.

About AMD

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