Subject: Re: Smash Bros. Brawl
Posted by Zion on Thu, 13 Mar 2008 20:25:37 GMT
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Actually, both Aircraftkiller and RenX are incorrect about the PS3's processor.

It's actually an 8 core processor.

7 of these perform tasks, the OS for example runs on one, graphics on another, sound on another, the HDTV output on another, inputs on another, etc etc. The 8th core is used as a failsafe incase one of these other cores fails.

How Stuff Works.com - Playstation 3 Article

Howstuffworks.com
The setup of the Cell processor is like having a team of processors all working together on one chip to handle the large computational workload needed to run next-generation video games. In order to understand how the Cell processor works, it helps to look at each of the major parts that comprise this processor.

The "Processing Element" of the Cell is a 3.2-GHz PowerPC core equipped with 512 KB of L2 cache. The PowerPC core is a type of microprocessor similar to the one you would find running the Apple G5. It's a powerful processor on its own and could easily run a computer by itself; but in the Cell, the PowerPC core is not the sole processor. Instead, it's more of a "managing processor." It delegates processing to the eight other processors on the chip, the Synergistic Processing Elements.

The computational workload comes in through the PowerPC core. The core then assesses the work that needs to be done, looks at what the SPEs are currently processing and decides how to best dole out the workload to achieve maximum efficiency.

The SPEs used in the Cell processor are each SIMD (Single Instruction, Multiple Data), 128-bit vector processors. Vector processors are designed to quickly process several pieces of data at once. They were commonly used in the 1980s in large, powerful, scientific supercomputers and were created as a faster alternative to the more common scalar processor. Scalar processors can only work one data element at a time. Despite this limitation, advances in scalar design and performance have made the use of vector processors very rare these days in most computers. However, because of the vector processor's ability to handle several data elements at once, IBM resurrected this design for the Cell. There are eight SPEs on the chip, but only seven of them handle processing. The eighth SPE is built in as redundancy in case one of the other seven fails.

The SPEs each come loaded with 256 KB SRAM. This high-speed memory helps each SPE crunch numbers quickly. The SPE memory is also visible to the main Processing Element. This allows the PowerPC Core to utilize the resources of each SPE in the most efficient way possible. All of this amounts to unprecedented power for a piece of consumer electronics.