

Dawning 6000: China launches its first homemade supercomputer

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China has unveiled its first supercomputer made exclusively of Chinese components. The announcement of the Dawning 6000 was made by lead chip architect Weiwu Hu at the International Solid State Circuits Conference last week in San Francisco. It will go online this summer and run Linux.

Clocking in at 300 [teraflops](#), it won't top any speed lists, but the machine will be one of world's most efficient. The 3,000 8-core Godson 3B chips run at 3.2 gigaflops per watt thanks to a low clock speed of 1 GHz and 64-bit MIPS architecture, which is more common in mobile devices. [China](#) already boasts the world's fastest machine -- the Tianhe-1A -- so brute computational power was not the goal here. Where the Tianhe-1A utilizes Intel CPUs and NVIDIA GPUs, the Dawning 6000 features only Chinese made chips.

While this development is not considered to be an immediate threat to international dominance of x86 processors used by AMD and Intel, the Godson's efficiency means it will be less hampered by costly and limiting cooling dynamics. This could allow for more powerful machines in the future as energy efficiency often acts as a limiting factor on current supercomputers. At the conference, Hu also gave a sneak peak of the next generation of the Dawning based on Godson-3C chips. It is expected to reach 512 gigaflops.

The next Godson-powered machine is slated for completion in 2012 or 2013. Its design would make it a petascale [supercomputer](#), a level of

power achieved only by the very fastest computers running today. The Dawning 6000 is currently the only MIPS-based machine in the Top 500 supercomputers, but the 3C version could aim for the top ten.

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