

# China produces x86 chips close to AMD server processors

Copyrighted x86 IP processors show that they are stepping into the commercial war and dealing with national security.

Thanks to a partnership with AMD and a complex joint venture agreement, Chinese chipmaker Chengdu Haiguang IC Design Co.(Hygon) currently produces x86 server processors very similar to AMD's EPYC processor. In terms of the same design, connecting Linux kernel developers almost does not have to do anything to support the new processor, named Dhyna.

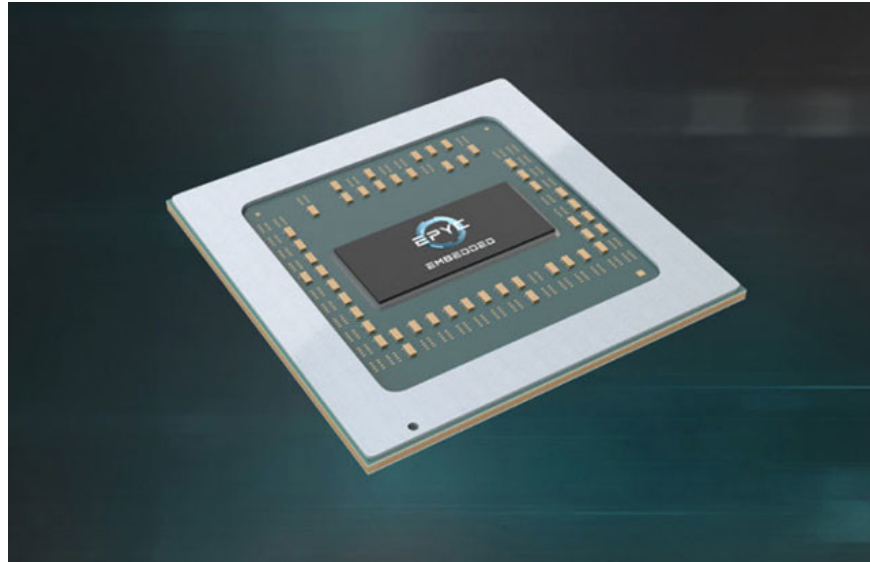
This server chip is only used domestically and is part of an effort to reduce China's dependence on foreign technology companies.

Since Edward Snowden revealed about the US intelligence agency using technology products to gather intelligence abroad, China increasingly puts more pressure on US technology product suppliers. They hope to develop the domestic technology industry through strict confidentiality regulations and investment in domestic suppliers.

The demand for highly computable server processors also comes from the US limited export to China. In 2015, the Obama administration banned the sale of Intel Xeon processors to China's Tianhe-2 supercomputer due to fears of supporting their nuclear weapons program.

Since then, the sale of processors capable of calculating high prices to China is still limited and the US government does not allow China to buy technology companies due to concerns about national security.

These prohibitions make the Chinese government invest more in domestic microprocessors and also find ways to wriggle through prohibitions with cooperation and joint ventures. Suzhou PowerCore Technology Co. buy IBM Power8 architecture license from 2015; Zhaoxin, a state-owned technology company, designs x86 domestic processors through joint ventures with VIA. Now, copyright cooperation with AMD - both promotes licensing and joint venture, allows the use of x86's intellectual property - the first steps in creating an instant server platform. domestic.



*The chip that closely resembles AMD's EPYC processor has appeared in China*

Based on the AMD core architecture of AMD and EPYC, Dhyana processors currently focus on embedded applications. They are not pin-processor microprocessors but have AMD's SoC design, like the EPYC embedded microprocessor processor. However, they are so similar that according to Phoronix's Michael Larabel, transcoding Linux kernel from EPYC processor to Hygon's chip requires less than 200 new lines of code.

The SoC design also does not exclude the use of Dhyana microprocessors on group applications that require high computational capabilities or data center applications (if not for trade restrictions), often due to Intel Xeon or microprocessors. Other server processing done.

Looking at China's efforts with the information technology industry, despite US restrictions, embedded server technology will probably also meet domestic demand.

The good news for AMD is that the joint venture still gives them profits, plus the \$ 239 million they received in 2016 from Tianjin Haiguang Advanced Technology Investment Co.(THATIC), a division specializing in investment of Chinese Academy of Sciences.

No matter how current Washington and Beijing relations are, it is uncertain how long this relationship will last. But surely the profits will go along with national security concerns.

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