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# Xeon and Opteron dead on supercomputers

Written by [Nick Farrell](#)

## Researchers say mobile chips will rule

**Spanish** boffins say that smartphone chips could one day replace the Xeon and Opteron processors used in most of the world's top supercomputers. In a paper in a paper titled "Are mobile processors ready for HPC?" researchers at the Barcelona Supercomputing Center wrote that less expensive chips bumping out faster but higher-priced processors in high-performance systems.

In 1993, the list of the world's fastest supercomputers, known as the Top500, was dominated by systems based on vector processors. They were nudged out by less expensive RISC processors. RISC chips were eventually replaced by cheaper commodity processors like Intel's Xeon and AMD Opteron and now mobile chips are likely to take over.

The transitions had a common thread, the researchers wrote: Microprocessors killed the vector supercomputers because they were "significantly cheaper and greener," the report said. At the moment low-power chips based on designs ARM fit the bill, but Intel is likely to catch up so it is not likely to mean the death of x86.

The report compared Samsung's 1.7GHz dual-core Exynos 5250, Nvidia's 1.3GHz quad-core Tegra 3 and Intel's 2.4GHz quad-core Core i7-2760QM - which is a desktop chip, rather than a server chip. The researchers said they found that ARM processors were more power-efficient on single-core performance than the Intel processor, and that ARM chips can scale effectively in HPC environments. On a multi-core basis, the ARM chips were as efficient as Intel x86 chips at the same clock frequency, but Intel was more efficient at the highest performance level, the researchers said.

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