

**BUILT 4 DESIGNERS**

## Nvidia and Barcelona Supercomputing Centre to Build ARM- and GPU-Based Supercomputer

Nvidia and BSC to Build Supercomputer Powered by Tegra and Tesla Chips

by [Anton Shilov](#)

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Nvidia Corp. and Barcelona Supercomputing Center (BSC) said on Monday that they had initiated development a new hybrid supercomputer that, for the first time, will use energy-efficient, low-power Nvidia Tegra ARM system-on-chips as well as high-performance Nvidia Tesla compute accelerators.

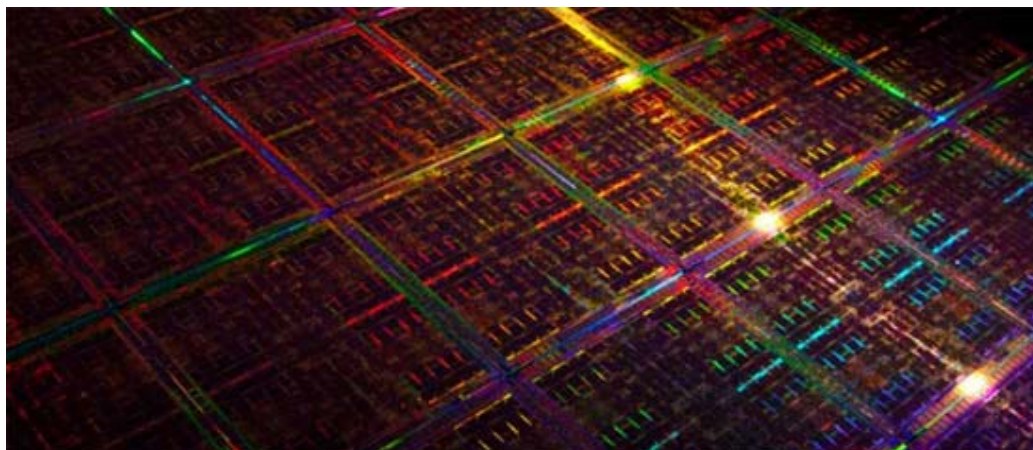
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BSC is planning to develop the first large scale system based on this technology, with a near term goal of demonstrating two to five times improvement in energy efficiency compared with today's most efficient systems. BSC's ultimate research goal is to deliver exascale-level performance while using 15 to 30 times less power than current supercomputer architectures. This so-called EU Mont-Blanc Project will explore next-generation HPC architectures and develop a portfolio of exascale applications that run efficiently on these kinds of energy-efficient, embedded mobile technologies.



“In most current systems, CPUs alone consume the lion's share of the energy, often 40% or more. By comparison, the Mont-Blanc architecture will rely on energy-efficient compute accelerators and ARM processors used in embedded and mobile devices to achieve a four- to 10-times increase in energy-efficiency by 2014,” said Alex Ramirez, leader of the Mont-Blanc Project.

To support growing demand for similar ARM-based initiatives around the world, Nvidia also announced plans to develop a new hardware and software development kit. The kit, with hardware developed by SECO, will feature a quad-core Nvidia Tegra 3 ARM CPU accelerated by a discrete Nvidia graphics processing unit (GPU). It is expected to be available in the first half of 2012, and will be supported by the Nvidia CUDA parallel programming toolkit.

BSC is showing the system design publicly for the first time at this week's SC11 Conference.