



Barcelona Supercomputing Center to Deploy World's First ARM-Based CPU/GPU Hybrid Supercomputer



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Prototype System With Energy Efficient Tegra ARM CPUs and CUDA GPUs Advances Europe Toward Exascale Supercomputing

SEATTLE, WA -- (Marketwire) -- 11/14/2011 -- SC11 -- NVIDIA today announced that the Barcelona Supercomputing Center (BSC) is developing a new hybrid supercomputer that, for the first time, uses energy-efficient, low-power NVIDIA® Tegra™ ARM CPUs, together with high-performance NVIDIA® CUDA® GPUs.

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 is showing the system design publicly for the first time at this week's SC11 Conference, which runs Nov. 14-17 in Seattle, Wash., in exhibit booth #235.

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 percent or more," said Alex Ramirez, leader of the Mont-Blanc Project. "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."

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 GPU. It is expected to be available in the first half of 2012, and will be supported by the NVIDIA CUDA parallel programming toolkit.

In recognition of its ground-breaking work leveraging NVIDIA GPUs and CUDA technology to drive education and research programs across a range of scientific disciplines, BSC was named a CUDA Center of Excellence by NVIDIA. The CUDA Center of Excellence program rewards and fosters collaboration with leading institutions that are at the forefront of parallel computing research.

BSC joins an elite network of 14 institutions around the world that are advancing awareness of parallel computing and empowering academics and scientists to conduct world-changing research. For more information

about the CUDA Center of Excellence program visit: <http://research.nvidia.com/content/cuda-centers-excellence>.

About the Mont-Blanc Project

The Mont-Blanc project brings together a purely European consortium which joins industrial technology providers and research supercomputing centers: Bull, as the major HPC system vendor, ARM, as the world leader in embedded high-performance processors, and Gnodal, as interconnect partner that focuses its new product on scalability and power efficiency. Besides the technology providers, Mont-Blanc unites the supercomputing centres from the four Tier-0 hosting partners in PRACE who have leading roles in system software and exascale application development: Germany (Forschungszentrum Jülich, BADW-LRZ), France (GENCI, CNRS), Italy (CINECA), and Spain (BSC).

About BSC

The Barcelona Supercomputing Center (BSC, <http://www.bsc.es>) houses MareNostrum, one of the unique supercomputers in a renovated old chapel-style building. Its mission is to research, develop and manage information technology in order to facilitate scientific progress. With this objective, the center counts with research areas in Computer Sciences, Life Sciences, Earth Sciences and Computational Applications in Science and Engineering. In the context of this multi-disciplinary approach, the BSC has a large number of researchers and experts in HPC (High Performing Computing), which facilitate scientific progress together with state-of-the-art supercomputing resources. More than 350 people work at BSC on research and 100 of those are from outside Spain.