BSC and IBM Recognize First anniversary of the Supercomputing Technology Center

Facility manages research projects related to smarter cities modeling on the basis of semantic technology, processor architecture or new programming models and execution environments.

Barcelona Supercomputing Center and IBM have celebrated the first anniversary of the creation of the “Supercomputing Technology Center”, whose main aim is the execution of research projects related to hardware and software technologies in high-performance computing. The collaboration of the two organizations is valued at 6 million euros.

During its first year in operation, ten projects have been selected. Today, scientists and researchers from the BSC IBM Spain and the IBM Research labs in New York and Switzerland are collaborating in these projects, driving the study of an extremely interesting field for both organizations: high-performance computing (HPC). As technological and research partners both organizations develop projects to keep on improving new technologies that are essential in the current context, such as smarter cities modelling on the basis of semantic ontology, processor architecture or new programming models and execution environments that take into account performance and energy consumption.

Given the evolution that microelectronic technology has experienced in recent years, the future generations of supercomputing systems need research projects like this to help solve the current challenges of high-performance computing (HPC). Through this collaboration, the scientists from both organizations expect to make progress in the design of new system architectures --from the processor to the interconnection network-- according to performance, energy and cost efficiency criteria, and also improve scalability in

millions of processors and in programmability of future heterogeneous architectures.

Nine years of joint research

This agreement is another landmark in the close relationship between IBM and the BSC. The first collaboration agreement was signed in 2005, which focused on the supercomputer MareNostrum. Thanks to the joint work carried out at the time, MareNostrum ranked first in the Top500 ranking of European supercomputers several times, and it even achieved the fourth position worldwide. Some relevant choices regarding design --such as the utilization of components, processors and interconnection networks of commercial use and open source software-- that were adopted later for most supercomputers, were implemented for the first time in MareNostrum. Two years later, the BSC and IBM renewed and extended their collaboration commitment to cooperate in the project MareIncognito. That initiative was another landmark in the recent history of supercomputing because of its multidisciplinary character and also because it did not focus exclusively on matters such as power or speed. The project MareIncognito combined processor design, programming models, efficiency maximization and efficient load balancing mechanisms.

Part of the Supercomputing Technology Center team:

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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