IBM and BSC celebrate a decade of collaboration

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via IBM

IBM (NYSE:IBM) and Barcelona Supercomputing Center- Centro Nacional de Supercomputación (BSC-CNS) celebrate a decade of collaboration since the prestigious Center of Supercomputing was established in April 2005. Through this collaboration, IBM has invested more than 10 million Euros in joint research, technology transfer and training programs. IBM's cooperation with the BSC-CNS dates back to 2000 when the Centro de Paralelismo de Barcelona (CEPBA), precursor of BSC-CNS, signed a four-year agreement with IBM to create the CEPBA-IBM Research Institute (CIRI) which specialized in deep computing.

History of success

IBM and BSC-CNS activity has resulted in three big projects: Centro Tecnológico de Supercomputación (2013-2015), Research and Development *MareIncognito* project (2007-2011) and *MareNostrum* supercomputer (2005-2007). Through this collaboration, both organizations have conducted numerous joint research projects involving IBM labs in the area of high performance computing.

"The close collaboration between the Centro Nacional de Supercomputación and IBM over the past decade has enabled a very significant advancement of supercomputing in Spain. We are very proud to have contributed to Spain’s place among the leaders in supercomputing and to facilitate social and economic progress through the use of this technology,” said Marta Martinez, IBM Spain, Portugal, Greece and Israel,

country general manager.

“The collaboration with IBM through the CIRI was essential to create the BSC-CNS. Since 2005, we have maintained this collaboration investigating new technologies together on hardware and software for supercomputers and we look forward to many more years working together,” said Mateo Valero, director of the Barcelona Supercomputing Center-Centro Nacional de Supercomputación.

Centro Tecnológico de Supercomputación

In 2013, IBM and BSC-CNS signed a partnership agreement to create the Centro Tecnológico de Supercomputación with a mandate to develop research projects and related hardware and software technologies for high performance computing. In its first year of activity this center laid the foundation for 10 collaborative projects between scientists from BSC-CNS, technology professionals from IBM Spain, and scientists from IBM Research labs in New York and Zurich. This center will enable progress in key technologies such as smarter cities modeling based on semantic ontology; processor architecture and new programming models; and execution environments taking into account both performance and energy consumption. IBM investment was primarily devoted to fund research positions.

MareIncognito

In 2007 BSC-CNS and IBM signed a partnership agreement to cooperate on a Research and Development project called *MareIncognito*. IBM contributed funds, technology and human capital and BSC-CNS added a team of more than 40 researchers. This agreement was a milestone in the recent history of supercomputing for its multidisciplinary character and wide scope, focusing on issues beyond power and speed and bringing together research project matters such as processor design, programming models, greater efficiency or mechanisms in efficient load balancing.

MareNostrum supercomputer

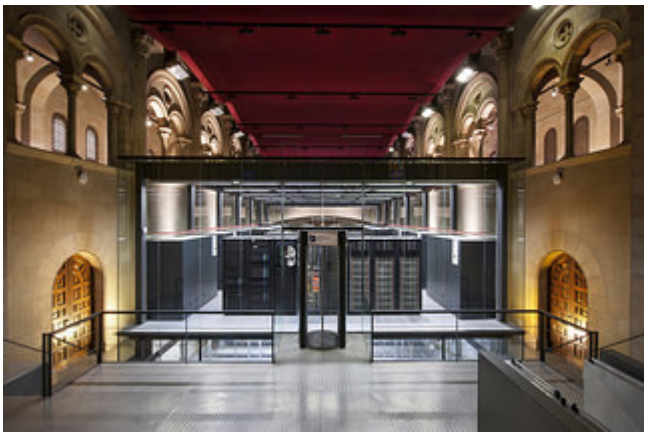
The *MareNostrum* supercomputer –now in its third generation-- is the fastest in Spain today and in all of Europe at the time it was built. Completed in 2004 in a record time of two months by IBM, the supercomputer was the result of an agreement signed by IBM and the Government of Spain. In 2005, IBM and BSC-CNS signed a collaboration agreement to develop research projects around *MareNostrum*, and IBM became the first BSC-CNS technology and research partner. *MareNostrum* allows the Spanish scientist community to develop research in Spain and positions BSC-CNS as an international leader in the field of supercomputing; without it, the research would have been done in other international supercomputing centers.

Thanks to *MareNostrum* numerous research projects in life sciences, biomedicine, chemistry, materials science, physics, engineering, earth sciences, astronomy and space have been developed. These include the study of protein-protein interactions to improve drug design, prediction of air quality, the study of turbulent flows on aircrafts wings and turbines and the impact and consequences of climate change, among others.

MareNostrum pioneered some technological issues such as the use of components, processors and interconnection networks with commercial use and open source software. It is currently housed in the former chapel of the Universidad Politécnica de Barcelona and occupies the 57th ranking in the Top 500 Supercomputing (November 2014) list.

For more information on IBM’s Technical Computing offerings, please visit:
http://www.ibm.com/technicalcomputing

To learn more about the vision for Data Centric Systems, please visit:
http://research.ibm.com/articles/datacentricdesign



The former Chapel Torre Girona in Barcelona houses the MareNostrum supercomputer at the Barcelona Supercomputing Center. This month, IBM and the Barcelona Supercomputing Center celebrate a 10-year partnership of advancing breakthroughs in human genome research, astrophysics, and weather forecasting. The supercomputer currently ranks 57th of most powerful systems on the Supercomputing TOP 500 list.

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