

BSC at ISC'15

The conference took place from 12 to 16 July in Frankfurt, Germany.



The [ISC High Performance conference](#) is famous for its world-class program, with over 300 academia and industry leaders tackling the most important issues of supercomputing, industry innovation and new technologies. The conference will take place from 12 to 16 July in Frankfurt, Germany.

Jesús Labarta, Director of the Computer Sciences department at BSC, will talk about [Resource Management & the NANOS Runtime](#) which will take place on Monday, July 13, from 2:40 pm to 3:00 pm

Sergi Girona, Director of the Operation department at BSC and PRACE chair of the Board of Directors, will give the talk [EXDCI: European eXtreme Data & Computing Initiative](#) which will take place on Monday, July 13.

[ETP4HPC](#) will be present at the ISC15 with the [BoF 07: Update on European HPC Ecosystem Development](#), organized by Marcin Ostasz, Business Analyst at BSC.

This year ISC incorporates newly-introduced workshops in its programme on Thursday, July 16th. The idea is to provide a focused, in-depth platform for presentations, discussion and interaction in a particular subject area. BSC will participate and give two workshops:

- ["Is Europe Ready For Exascale? A Summary of Four Years of European Exascale Research"](#) with Filippo Mantovani presenting the latest results from the outcome of Mont-Blanc project
- [PRACE Training Day](#) with Nia Alexandrov from the Education area as one of the organizers and with the presentation titled [PATC Curriculum & Links with Universities](#) given by María-Ribera Sancho, Responsible of Academic BSC Programs.

A group of six undergraduate students from [Barcelona School of Informatics](#) (Universitat Politècnica de Catalunya - Barcelona Tech) involved in the Mont-Blanc project will take part in the [4th HPCAC-ISC Student Cluster Competition](#). The competition is an opportunity to showcase student expertise in a friendly yet spirited competition. The so-called [Mont-Blanc climbers team](#) will be the first Spanish team to have the opportunity to demonstrate their skills in setting up and administrating an ARM-based HPC cluster within the established power limit of 3000W. They will also demonstrate their skills in optimizing the benchmarks and applications for that specific architecture. Interested in meeting the team? Come and meet them at booth #422 of the Student Cluster or at the joint European Exascale Projects, at booth #634. Further information [here](#).

For any additional information, please do not hesitate to visit us at the Barcelona Supercomputing Center booth, number **#1202**, during the exhibition and we will be happy to answer any questions you might have.



Barcelona Supercomputing Center

SCIENTENCES

Efficient and productive programming

StarSs

- Productive parallelization
- Easy to use
- High performance
- Supports MPI, OpenMP, and other parallel programming models

COMPSs

- Supports Java, Python and C++
- Integration with parallel data sets and user provided libraries
- Working with services in the cloud and in the data center
- Integration with MPI/OpenMP and other parallel programming models

OmpSs

- Easy to use
- High performance
- Supports MPI, OpenMP, and other parallel programming models

Performance analysis

- Real-time analysis
- Easy to use
- High performance

Life Sciences

- Genomics
- Protein structure prediction
- Drug discovery

Earth Sciences

- Climate modeling
- Geophysics
- Oceanography

Physics and Engineering

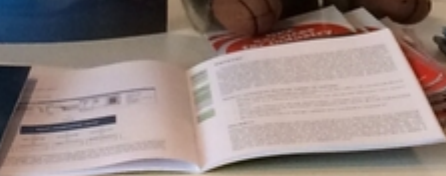
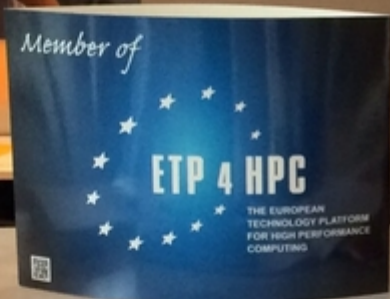
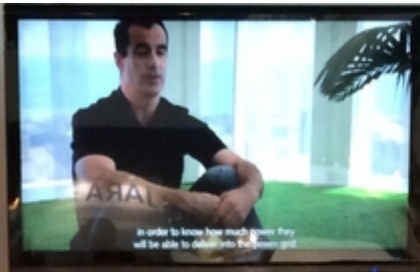
- Computational fluid dynamics
- Structural analysis
- Material science

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The booth features a white table with a laptop displaying the BSC logo and a monitor showing a server rack. Two men in blue BSC polo shirts are standing behind the table. A woman in a red shirt is seated at the table. A sign on the table reads "ALL NEW MEMBER OF THE UNICORE ECOSYSTEM". A rack of brochures is visible on the right side of the booth.



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Efficient and productive programming

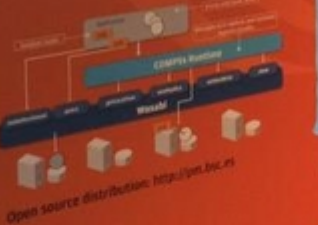
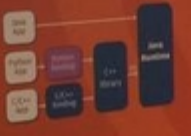
Productive parallelization

- Execution of user-defined parallel code on single address-space tasks
- Non-intrusive parallelization
- Efficient communication with large amounts of data
- Flexibility: customizations to hardware

SLURM
COMPSs
PyCOMPSs

OmpSs

- Support to Java, Python and C++
- Integration with persistent object storage and non-relational databases
- Leveraging web services in the Cloud and in the GPU
- Interoperability with public/private Cloud infrastructures



Open source distribution: <https://on.bsc.es>

Performance Analytics

From monitored data to insight

Life Sciences

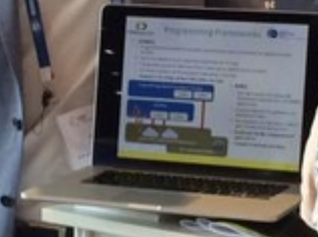
- Genomics
- Protein structure
- Drug discovery

Earth Sciences

- Computational earth science
- Data mining and analysis

Infrastructure and Support

- Infrastructure
- Support



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