The Spanish National Supercomputing Network (Red Española de Supercomputación) - RES

The definition of RES

In March 2007, the Spanish Ministry of Education and Science (Ministerio de Educación y Ciencia del Gobierno de España) creates the Spanish National Supercomputing Network or Red Española de Supercomputación (RES). This network consists of a distributed structure of supercomputers in order to give support to the supercomputing needs of the diffent research groups in Spain. The initial nodes of this network are allocated at the Barcelona Supercomputing Center (BSC) in Barcelona, at the Universidad Politécnica de Madrid (Centro de Supercomputación y Visualización de Madrid), at the Instituto Astrofísico de Canarias (IAC), at the Instituto de Tecnología de Canarias (ITC) and at the universities of Cantabria, Málaga, Valencia and Zaragoza.

The RES technical managament is coordinated by BSC and supports the increasing demand of supercomputing power of the Spanish scientifc community.

	Peak Performance (TFlops)	TOP500 Ranking (November, 2009)
BSC-CNS	94.208	77
Universidad Politécnica de Madrid	21.190	--
Instituto de Astrofísica de Canarias	4.506	--
Univ. Cantabria	4.506	--
Univ. Malaga	4.506	--
Univ. Valencia	4.506	--
Univ. Zaragoza	4.506	--
ITC	3.360	--

The RES access

The RES applications are evaluated by an Access Commitee formed by 44 well-known scientists that analyse all access requests. Scientists can ask for supercomputing power at the RES through the online form on page www.bsc.es/RES. The access is quarterly and there are four panels: Astronomy, Space and Earth Sciences; Biomedicine and Life Sciences; Physics and Engineering; Chemistry and Materials Science and Technology.

The RES support

- **Users support:** providing a computational and parallelization support to users in order that the applitacions and calculations run effectively
- **Technical Seminars:** organizing seminars that allow sharing experiences and knowledge of the system engineers that mantain all nodes
- **RES Conferences:** organizing seminars that allow knowing all advantages of supercomputing and expert support that the user receives

The RES nodes

MareNostrum (located at BSC)

See below a summary of the system:

- Peak Performance of 94,21 TeraFlops
- 10240 IBM Power PC 970MP processors at 2.3 GHz (2560 JS21 blades)
- 20 TB of main memory
- 280 + 90 TB of disk storage
- Interconnection networks:
    - Myrinet and Gigabit Ethernet
- Linux: SuSe Distribution

Magerit (Universidad Politécnica de Madrid)

- Peak Performance of 21,19 TeraFlops
- 2408 IBM Power PC 970XF processors at 2.2 GHz
- 4.7 TB of main memory
- Interconnection networks:
    - Myrinet and Gigabit Ethernet
- Linux: SuSe Distribution

Instituto Tecnológico de Canarias (ITC)

See below a summary of the system:

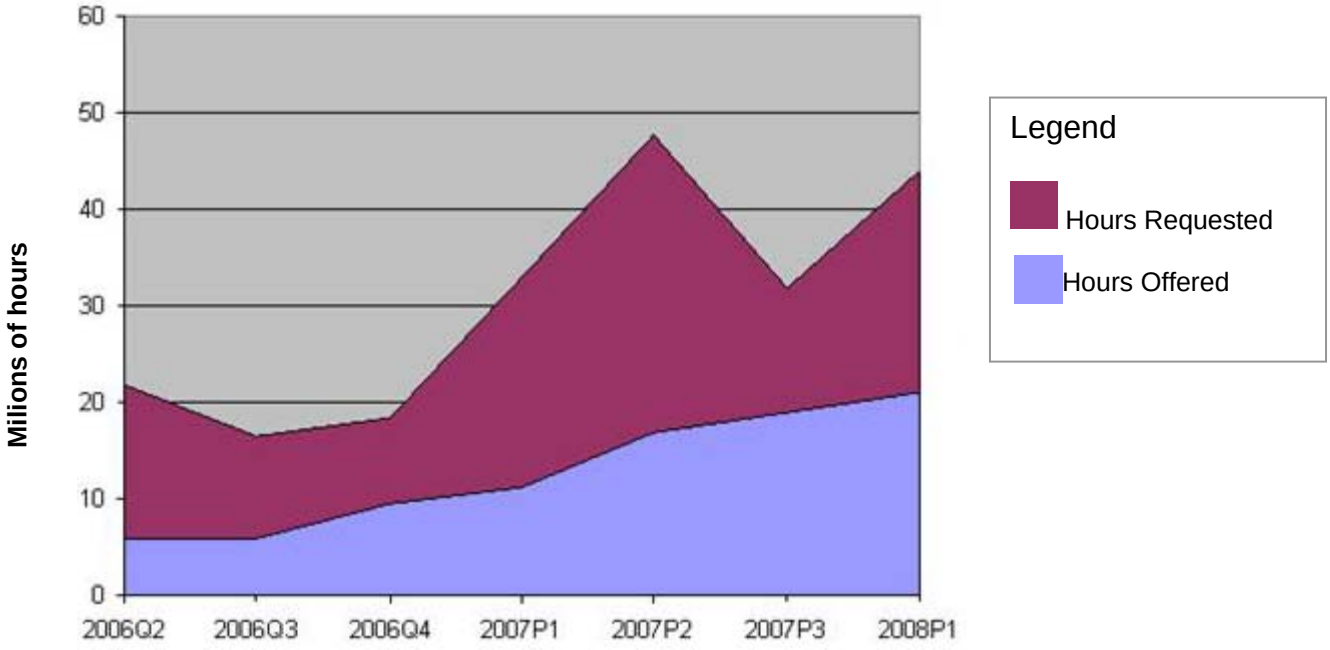
- Peak Performance of 3.36 TeraFlops
- JS21 Processors a 2.3 GHz at 2.2 GHz
- 3 TB of main memory
- Interconnection networks:
    - Myrinet and Gigabit Ethernet
- Linux: SuSe Distribution

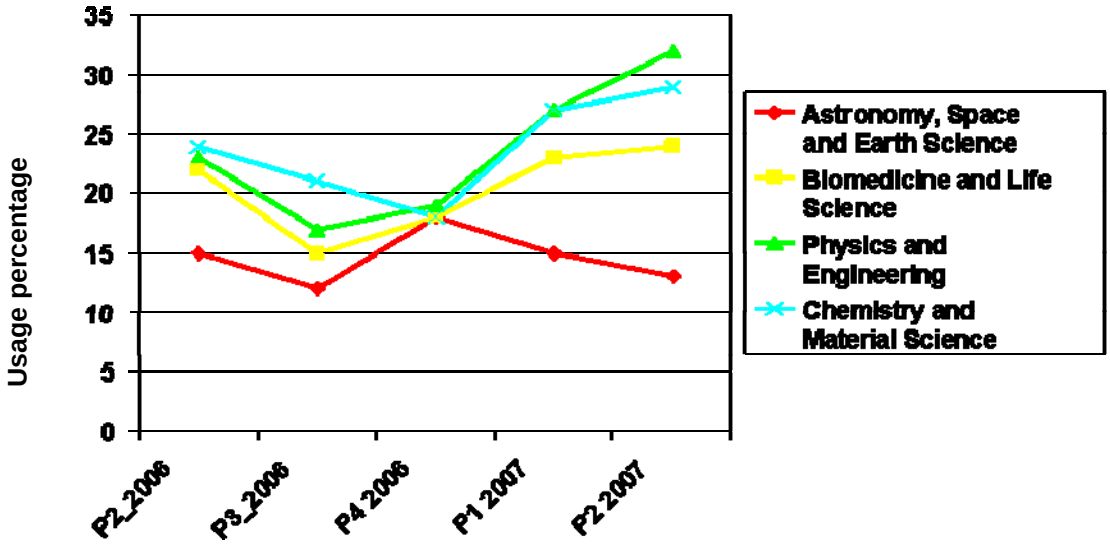
Altamira (Universidad de Cantabria), LaPalma (Instituto de Astrofísica de Canarias), Picasso (Universidad de Málaga), Tirant (Universitat de València) and CaesarAugusta (Universidad de Zaragoza)

- Peak Performance of 4.5 TeraFlops
- 512 IBM Power PC 970XF processors at 2.2 GHz
- 1 TB of main memory
- Interconnection networks:
  - Myrinet and Gigabit Ethernet
- Linux: SuSe Distribution

The RES current activities

All RES curernt activities are avalaible on page http://www.bsc.es/plantillaA.php?cat_id=375 organized by scientific area.





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