

# High Performance Computing

Welcome to the support pages on supercomputing at IFCA.

## Why supercomputing at IFCA

IFCA entered the supercomputing field with the installation in 2007 of the ALTAMIRA node of the University of Cantabria within the Spanish Supercomputing Network ([Red Española de Supercomputación = RES](#)) coordinated by the [Barcelona Supercomputing Center \(BSC\)](#). The node systems were installed at IFCA datacenter room, and its operation supported by IFCA team in a joint effort with ATC group. The first ALTAMIRA node system was a cluster of 256 IBM PowerPC JS20 servers, with a total of 512 cores, part of the first Mare Nostrum supercomputer installed previously at BSC. This system made into the [top500.org](#) systems in 2007, and operated successfully within the RES until 2012.

The ALTAMIRA node was upgraded in June 2012 with the installation of a new system at IFCA datacenter room. The system was presented on 3rd October 2012 (see the video at <http://www.rtve.es/alacarta/videos/telecantabria/telecantabria-03-10-12/1542705> (Telecantabria 2 - 03/10/12, min. 8:02 )

Our supercomputing services also include support for large and high-performance data storage, advanced network support, and adaptation and optimization of parallel applications.

## Altamira Supercomputing Node at University of Cantabria

The supercomputing node at the University of Cantabria is named ALTAMIRA.

Its use is offered as part of the [Santander Supercomputing Services](#) within the Scientific-Technical Services at University of Cantabria.

The current systems in the ALTAMIRA node include:

- An HPC cluster, integrating IBM-idataplex dx360m4 servers, each one with 2xE5-2670 Intel Sandybridge Xeon processors, 64GB RAM, 500GB HD and all of them interconnected with [InfiniBand](#) FDR10 cards and switches from Mellanox in FAT tree topology, completing a system with more than 2500 cores and 10 Terabytes of memory. The peak capacity exceeds 50 Tflops.

ALTAMIRA is connected to an on-line storage system offering to users capacities up to Petabytes under the GPFS parallel file system, and unlimited archiving on tapes with 20 years lifetime.

See a short video here: <https://vimeo.com/138956695>

## How to Access to Santander Supercomputing Services

Santander Supercomputing Services are available for:

- Researchers at University of Cantabria, follow this [link](#).
- Researchers in Spain, through the Spanish Supercomputing Network, RES, coordinated by BSC, follow this [link](#).
- New research projects, with external institutions or with companies, follow this [link](#).

Please, acknowledge the [Usage Terms](#).

## Using Santander Supercomputing Services

If you already have access granted for execution of applications, see the [ALTAMIRA Userguide](#).

If you need support for adaptation of applications, or need more information, please contact [ssc@unican.es](mailto:ssc@unican.es)

## Acknowledgment in publications

Please, include an acknowledge to the IFCA at the University of Cantabria for the use of Altamira supercomputer with a text similar to:

*We acknowledge Santander Supercomputación support group at the University of Cantabria who provided access to the supercomputer Altamira Supercomputer at the Institute of Physics of Cantabria (IFCA-CSIC), member of the Spanish Supercomputing Network, for performing simulations/analyses.*