

Exploitation of the MareNostrum 4 HPC using ARC-CE

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HPC resources will help meet the future challenges of HL-LHC in terms of CPU requirements. The Spanish HPC centers have been used recently by implementing all the necessary edge services to integrate the resources into the LHC experiments workflow management system. Since it not always possible to install the edge services on HPC premises, we opted to set up a dedicated ARC-CE and interact with the HPC login and transfer nodes using ssh commands. In the ATLAS experiment, the repository that includes a partial copy of the experiment software in CVMFS is packaged into a container singularity image to overcome network isolation for HPC worker nodes and reduce software requirements. This article shows the Spanish contribution to the simulation of experiments after the agreement between the Spanish Ministry of Science and the Barcelona Supercomputing Center (BSC), the center that operates MareNostrum 4. Finally, we discuss some challenges to take advantage of HPC machines' next generation with heterogeneous architecture combining CPU and GPU.

Primary authors: ACOSTA SILVA, Carlos (PIC); DEL PESO, Jose (Universidad Autonoma de Madrid (ES)); FULLANA TORREGROSA, Esteban (Univ. of Valencia and CSIC (ES)); Dr GONZALEZ DE LA HOZ, Santiago (Univ. of Valencia and CSIC (ES)); PACHECO PAGES, Andreu (Institut de Física d'Altes Energies - Barcelona (ES)); SALT, Jose (Univ. of Valencia and CSIC (ES)); SANCHEZ MARTINEZ, Francisco Javier (Univ. of Valencia and CSIC (ES))

Presenter: PACHECO PAGES, Andreu (Institut de Física d'Altes Energies - Barcelona (ES))

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