Cross-Layer Abstractions and Run-time for I/O Software Stack of Extreme-scale systems

Fact Sheet

Project Information

CLARISSE
Grant agreement ID: 328582

Closed project

Start date 30 September 2013
End date 29 September 2016

Funded under
Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Total cost € 352 823,70
EU contribution € 352 823,70

Coordinated by
UNIVERSIDAD CARLOS III DE MADRID
Spain

Objective

The ever-increasing data needs of scientific and engineering applications require novel approaches to manage and explore huge amounts of information in order to advance scientific discovery. To achieve this goal, one of the main priorities of the international scientific community is addressing the challenges of performing scientific computing on Exaflop machines by 2020. Future Exaflop platforms will be
likely characterized by a three to four orders of magnitude increase in concurrency, a substantially larger storage capacity, and a deepening of the storage hierarchy. In the face of these foreseeable evolutions researchers agree that the current uncoordinated development model of independently applying optimizations at each layer of the system software I/O software stack will not scale to the new levels of concurrency, storage hierarchy, and capacity. The main goal of CLARISSE project is to explore a radical new approach of reforming the I/O software stack in order to advance toward the milestone of reaching Exascale on the High End Computing (HEC) platforms. The key insight is to investigate cross-layer control mechanisms and run-times, seeking to unify the access to several layers of volatile and nonvolatile storage and to improve scalability, performance, and resilience of the I/O software stack. CLARISSE will be developed in collaboration with top-level scientists from Argonne National Laboratory (US) in a multidisciplinary environment. The execution of this project will offer the scientist the opportunity to enhance his research, leadership, mentoring and teaching skills, to build novel collaborations with international researchers, and to enhance his profile in the scientific community. The final objective of CLARISSE is to bring the developed technologies and the newly acquired knowledge and skills back to Europe in order to contribute to the competitiveness and the excellence of the European Research Area.

Fields of science

natural sciences › computer and information sciences › software › software applications › system software

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Programme(s)

FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Topic(s)

FP7-PEOPLE-2012-IOF - Marie Curie Action: "International Outgoing Fellowships for Career Development"

Call for proposal
Funding Scheme

MC-IOF - International Outgoing Fellowships (IOF)

Coordinator

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Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type
Higher or Secondary Education Establishments

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Links
Contact the organisation  Website

EU contribution
No data

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