Cluster Computing

Special Issue on

"System Software for Big Data and HPC Convergence"

CALL FOR PAPERS

In the era of Big Data, developing modern computing systems and system software that can scale to massive amounts of data becomes a key challenge to both researchers and practitioners. Scalability in distributed system usually means that the performance of a system should increase proportionally with the increase of resources. However, this is not sufficient in the big data era. Big data and HPC are converging in terms of hardware and software. As a consequence, the system should be designed in a way so that all the five Vs of big data can be tackled. Driven by this insight, this special issue aims at presenting the current state-of-the-art research and future trends on various aspects of big data programming and system software techniques for big data processing and attempts towards building highly adaptive big data systems that can automatically adapt their behaviors to the amount of available resources. The major subjects cover methodologies, modeling, analysis and newly introduced applications. Besides the latest research achievements, this special issue also covers innovative commercial data management systems, innovative commercial applications of big data technology, and experience in applying recent research advances to real-world problems. The papers will be peer reviewed and selected on the basis of both their quality and their relevance to the theme of this special issue.

Topics of interest include, but are not limited to:

- Big data programming models
- Big data runtime systems
- Convergence of Big Data and HPC
- Big data runtime systems
- Data reduction
- Compiler techniques on big data
- Database techniques and systems on big data
- New memory techniques
- Big data tools and visualization
- Parallelizing and Vector Compiler Techniques
- Compiler Optimizations for Superscalar/VLIW Architectures
- Intermediate Representations and Flow Analysis
- Languages and Libraries for High-Performance Computing
- Run-Time Optimizations
- Parallel Programming Environments
- Cluster and Grid Computing and Applications
- Data-Intensive Applications and Parallel I/O
- Pervasive and Ubiquitous Computing
- Compiler/OS/Architecture for low power
- High availability architectures
- Scalable and reconfigurable systems
- Scientific Applications

Important note:

- **Submitted articles must not have been previously published or currently submitted for publication elsewhere.**
- **Submissions must be directly sent via the Cluster Computing submission web site at https://www.editorialmanager.com/clus/default.aspx (please select article type -** S.I.: Advances in Big Data Programming System Software and HPC Convergence**).**
- **Manuscript Due: 30 Sept. 2016**