

Editorial: enabling technologies for programming extreme scale systems

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Abstract

Multi-core architecture presents a new trend, and core-based parallel processing algorithms will continue to become more important. In addition, Grid and Cloud Computing (GCC) has emerged rapidly as an exciting new paradigm that offers a challenging model of computing and poses fascinating problems ranging from parallel architecture to programming models and compiler optimization. Furthermore, the wide-scale deployment of computing nodes, clusters, and embedded processors will continue to fuel core parallel processing and distributed systems algorithms. Thus, the importance of scalable parallel programming will continue to grow. The field of parallel and distributed computing is going through rapid changes. The emerging multi-core commodity processors and advanced networking technologies are allowing for the design of cost-effective parallel and distributed systems. To achieve scalability and high performance in these systems, it is increasingly becoming challenging to design better architecture, software environments, networking protocols, compilers, operating systems, languages, algorithms and applications for designing next generation scalable and high-performance parallel systems. This special issue is intended to

foster stateof-

the-art research in the area of extreme scale parallel systems including the topics

of parallel algorithm design, data flow analysis, virtualization, energy efficient, load

balancing, parallel computing model, multi-core programming, GPU implementation

and optimization, execution on real-world parallel architecture and novel applications

associated with this new paradigm.

Keyword : parallel programming