

Special issue on energy-aware computing and communications

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Nowadays, high-end computing facilities can consume a very large amount of power albeit they provide high performance computing solutions for scientific and engineering applications. Energy consumption for high-end facilities thus contributes to a significant electric bill. Additionally, high power consumption in general results in higher cooling costs. Furthermore, to allow computing facilities to operate on high power for a long time will lead to high temperature of computing systems, which further harms a system's reliability and availability. Therefore, reducing power consumption for high end computing becomes a critical research topic.

This special issue is devoted to the state-of-the-art research in the field of energy-aware high-end computing. A number of high quality research articles were submitted. We (the guest editors) had a very difficult decision to make on the inclusion and exclusion of research articles. Because of the space constraints, we could only include the following eight outstanding research articles:

- An overview of energy efficiency techniques in cluster computing systems
- Classified power capping by network distribution trees for green computing
- Imbalance of CPU temperatures in a blade system and its impact for power consumption of fans
- Towards energy-efficient parallel analysis of neural signals
- CHERUB: power consumption aware cluster resource management
- DENS: data center energy-efficient network-aware scheduling
- Energy cost evaluation of parallel algorithms for multi-processor systems
- Parallel application-level behavioral attributes for performance and energy management of high-performance computing systems

Guest Editors

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