GCC2005 Special Issue on Autonomous Grid Computing

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This special issue selects high-quality papers from the Fourth International Conference on Grid and Cooperative Computing (GCC2005), held in Beijing, China, during Nov 30-Dec 3, 2005 [1] [2]. The GCC conference series aims at providing an international forum for the presentation and discussion of research trends on the theory, method, and design of Grid and cooperative computing as well as their scientific, engineering and commercial applications. It has become a major annual event in this area. The 1st International Conference on Grid and Cooperative Computing (GCC2002) received 168 submissions. GCC2003 received 550 submissions, from which 176 regular papers and 173 short papers were accepted. The acceptance rate of regular papers was 32%, and the total acceptance rate was 64%. GCC2004 received 427 main-conference submissions and 154 workshop submissions. The main conference accepted 96 regular papers and 62 short papers. The acceptance rate of the regular papers was 23%. The total acceptance rate of the main conference was 37%. For GCC2005, we received 576 submissions which were reviewed by two independent members of the international program committee. After carefully evaluating their originality and quality, we accepted 57 regular papers and 84 short papers. The acceptance rate of regular paper is 10% and the total acceptance rate is 25%. Correspondingly the papers presented here are re-reviewed extensions of the original conference papers selected from the regular papers.

Grid computing is developing with and benefiting many technologies including distributed computing, Internet, web services, Semantic Web, peer-to-peer computing, agents, cooperative computing, knowledge management, and artificial intelligence. Autonomous Grid Computing captures the fundamental theory and implementations of the future Grid infrastructure taking advantages of these technologies. There are many interesting integrations of these core ideas such as Service Computing, Semantic Grid, Knowledge Grid and semantic P2P which underlie Autonomous Grid Computing.

This special issue includes several topics of the Autonomous Grid Computing. Reference [3] describes use of service level agreements in scheduling in grid environments while reference [9] discusses timing constraints in grid workflow. Real-time streaming grids applied to sensor networks are covered by [4]. Three papers discuss agents and peer-to-peer networks with [6] describing relation of the abstract and physical networks; [7] covers a general approach to the integration of peer-to-peer and Grid ideas; [8] discusses the management of large collections of mobile agents. Reference [5] presents a new framework for an

autonomous semantic grid while [10] discusses the integration into a knowledge grid of the entire scientific environment from instruments through the final publications.

We hope this special issue could accelerate research and development in autonomous grid computing.

References

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