

Topic 8

Distributed Systems and Algorithms

Andrzej Goscinski, Gudula Rünger, Edgar Gabriel, and Christine Morin

Topic Chairs

Parallel computing is strongly influenced by the challenges of distributed systems, such as a need for a Single System Image, resource sharing and allocation, failures and a need for fault tolerance, long latencies, network partition, disconnected operation, demands of users wishing to solve more computationally and communication demanding problems, and opportunities created by grids and Web services. Distributed computing is the computing mainstream now; it is based on different forms of distributed systems: clusters, grids, peer-to-peer systems, web services, service oriented architectures. This topic provides a forum for research and practice, of interest to both academia and industry, about distributed computing and distributed algorithms. Submissions were encouraged in all areas of distributed systems and algorithms relevant to parallel computing, with emphasis on design and practice of distributed algorithms, analysis of the behaviour of distributed systems and algorithms, distributed fault-tolerance, distributed operating systems and databases, scalability, concurrency and performance in distributed systems, resource sharing and load balancing in distributed systems, distributed algorithms in telecommunications, distributed mobile computing, resource and service discovery, security in distributed systems, and standards and middleware for the distribution of parallel computations. Twenty papers were submitted in this topic. The subjects were varied, but a common theme of many of them is recovery, resource allocation, mutual exclusion, garbage collection and coordination. Other themes include load balancing, scheduling and consensus algorithms. Eight papers have been accepted.