Montresor, Alberto; **Meling, Hein**; **Babaoğlu, Özalp**

Messor: Load-balancing through a swarm of autonomous agents. (English) Zbl 1023.68805

Moro, Gianluca (ed.) et al., Agents and peer-to-peer computing. First international workshop, AP2PC 2002, Bologna, Italy, July 15, 2002. Revised and invited papers. Berlin: Springer. Lect. Notes Comput. Sci. 2530, 125-137 (2003).

Summary: Peer-to-peer (P2P) systems are characterized by decentralized control, large-scale and extreme dynamism of their environment. Developing applications that can cope with these characteristics requires a paradigm shift that puts adaptation, resilience and self-organization as primary concerns. Complex adaptive systems (CAS), commonly used to explain the behavior of many biological and social systems, could be an appropriate response to these requirements. In order to pursue these ideas, this paper presents Messor, a decentralized load-balancing algorithm based on techniques such as multi-agent systems drawn from CAS. A novel P2P grid computing system has been designed using the Messor algorithm, allowing arbitrary users to initiate computational tasks.

For the entire collection see [Zbl 1018.68766].

MSC:

68U99 Computing methodologies and applications
68T35 Theory of languages and software systems (knowledge-based systems, expert systems, etc.) for artificial intelligence
68M14 Distributed systems

Software:

PVM

Full Text: Link