Role-oriented Multi-Agents Approach to Optimize for Grid Resource Allocation*

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ABSTRACT

Managing resources in large-scale distributed systems – computational grids, is a very complex process. The computational grids resources are heterogeneous and their properties can vary over time. An approach adapt to computational grids environment is presented there. It is based on the role-oriented agents, where each role agent is modeled as a BDI agent. Those agents are autonomous (intelligent) processes, capable of communication with other agents, interaction with the world, and adaptation to changes in their environment. This article also describes the process of Resource allocation, which is one of a key technology of resource management in computational grids. And several optimizing strategies of resource allocation are discussed.

Keywords: Computational grids; resource allocation; BDI (Belief-Desire-Intention); agent