Economic Mechanism Driven Resource Management in Computational Grid

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ABSTRACT

In this paper, we apply market mechanism and agent to build grid resource management, where grid resource consumers and providers can buy and sell computing resource based on an underlying economic architecture. All market participants in the grid environment including computing resources and services can be represented as agents. Market participant is registered with a Grid Market Manager. A grid market participant can be a service agent that provides the actual grid service to the other market participants. Grid market participants communicate with each other by communication space that is an implementation of tuple space. In the paper, Grid agent model description is given. Then, the structure of Grid Market is described in details. The design and implementation of agent oriented and market oriented grid resource management are presented in the paper.

Keywords: agent, market, grid, resource management, tuple space