A Continuous Double Auction Method for Resource Allocation in Economic Grids

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Abstract

Sharing and optimized usage of resources utilities are one of the most essential goals in Grid systems. In such environments, patterns and aims of the resource providers and users for supply/demand differ. Beside, resource allocation algorithms attempt to provide the condition in which firstly providers are encouraged to keep on sharing their own computing resources and secondly the users are promoted to use the available resources to execute their jobs. Resource allocation ability to satisfy both sides, along with considering the users and providers mutual benefits, is a challenging task in grid market places. By a method suggested in this paper Continuous Double Auction, which is one of the most used methods in grid marketing, is improved through updating bids by the auctioneer itself. Also in this paper a method is presented for the providers to determine the resource price based on their workload and for users to determine their bids based on jobs deadlines. The results show an improvement in both economic utilization and scheduling utilization compared to the standard Continuous Double Auction.

References

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Index Terms

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