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**BlockChain Based Combinatorial Grouping Auction with Reserve Price Mechanism in Cloud Computing**

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**Abstract**

The block-chain is a growing decentralized scheme applied in many applications, such as an auction, smart contract, Health, and banking sector. The cloud service providers can sell the resource to cloud consumers using an auction. The main challenge in resource allocation using auction is to provide reliability to the users. In this paper, a blockchain-based combinatorial grouping auction with a reserve price mechanism (BCGAWRP) was proposed. The proposed scheme maximizes the total revenue and resource utilization by assuring reliability. The proposed BCGAWRP performance was assessed by simulating the cloud environment. The experimental result shows that the proposed BCGAWRP algorithm increases revenue more than the traditional combinatorial auction algorithm. Moreover, simulation studies show that reserve price is useful and provides a mechanism to achieve the trade-off between the seller's and the buyer’s virtual machines.

**Keywords:**

Cloud computing, Block chain, Auction, Combinatorial grouping auction, Virtual machines.

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