

عنوان مقاله:

Resource Reservation in Grid Networks based on Irregular Cellular Learning Automata

محل انتشار:

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خلاصه مقاله:

Computing infrastructures that are based on grid networks have been recognized as a basis for new infrastructures of distributed computing. Providing appropriate mechanisms for scheduling and allocating resources to user's requests in these networks is considered very important. One of the current issues in the grid networks is how to ensure the precise timing of executing requests sent by users, especially requests that have deadlines and also co-allocation requests. The resource reservation has been mainly developed to address this problem in the grid systems. On the other hand, models based on the cellular automata have advantages such as lower processing complexity, configurability of the cells, and the ability of predicting future conditions. In this study, an efficient model based on irregular cellular learning automata (ICLA) is presented for the task of resource reservation. The proposed model was simulated on a network with random topology structure. The performance of proposed method was compared with two well-known algorithms in this field. The experimental results showed increased efficiency in the resource utilization, decreased process execution delays, and reduced rate of request rejection.

کلمات کلیدی:

grid computing, advance reservation of resources, resource allocation, irregular cellular learning automata, Job scheduling

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