عنوان مقاله:

Security and Fault aware Scheduling in Computational Grid

محل انتشار:

فصلنامه بین المللی مهندسی مکاترونیک ، برق و کامپیوتر, دوره 3, شماره 9 (سال: 1392)

تعداد صفحات اصل مقاله: 28

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خلاصه مقاله:

Grid Computation is an issue that has received much attention from researchers in recent years. Its aim is to use the computational power of idle resources which have been distributed in differentplaces and under different policies and security conditions. Therefore, one of the challenges facing this technology is the issue of security of jobs and the computational sites. Distributed jobs in computational sites may become problematic due to some infections and malwares. As a result, therisks and security levels should be considered; computing resources must be evaluated by resourceowners for task execution, and scheduling should be based on requested users' security levels. This is the matter that has been ignored in the previous scheduling algorithms, which leads to waste of time and overhead. In this paper, a new method based on a combination of Genetic andImperialism Competitive algorithm is presented to implement a security-aware scheduling and failure algorithm. The proposed method is compared with the previous methods such as Min-Min, Suffrage and genetic algorithms, has become near optimal and led to reduce the overhead causedby violation of security conditions. Additionally, Due to the usage of fault tolerance mechanisms, the performance of these mechanisms has been evaluated and it was found that the replication mechanism had the lowest failure rate and the check point mechanism had a direct effect on the performance and it should be fully supervised and be smart.

کلمات کلیدی:

Computational Grid, Security, Failure, Fault tolerance, Genetic Algorithm, Imperialism Competitive Algorithm