

## Use of Improved Genetic Algorithm in Cloud Computing to Reduce Energy Consumption in Migration of Virtual Machines

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**Abstract :** One of the ways to increase the efficiency of services in the system of agents and, of course, in the world of cloud computing, is to use virtualization techniques. The aim of this research is to create changes in cloud computing services that will reduce as much as possible the energy consumption related to the migration of virtual machines and, in some way, the energy related to the allocation of resources and reduce the amount of pollution. So far, several methods have been proposed to increase the efficiency of cloud computing services in order to save energy in the cloud environment. The method presented in this article tries to prevent energy consumption by data centers and the subsequent production of carbon and biological pollutants as much as possible by increasing the efficiency of cloud computing services. The results show that the proposed algorithm, using the improvement in virtualization techniques and with the help of a genetic algorithm, improves the efficiency of cloud services in the matter of migrating virtual machines and finally saves consumption. becomes energy.

**Keywords :** consumption reduction, cloud computing, genetic algorithm, live migration, virtual Machine

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