

# Virtual machine placement in cloud systems using Learning Automata

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In recent years, the IT infrastructure due to the demand for computing power which used by applications are rapidly growing and modern data centers in cloud computing are hosting a variety of advanced applications. The high energy cost and green-house gas emissions are significant problems that have emerged as results of using large data centers. Thus providing an efficient method to reduce energy consumption by data centers is highly regarded by researchers. In this paper we present a new approach based on Learning Automata for dynamic replacement of virtual machines over data centers to reduce power consumption. Live migration and forcing idle nodes to sleep constitute main policies of this approach. To evaluate the proposed method, the workload is used in the real world. Simulation results show that the performance of the proposed method significantly reduces the energy consumption. However, the efficiency of the system is preserved to a considerable extent.

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