

## عنوان مقاله:

From Reliable Distributed System Toward Reliable Cloud by Cat Swarm Optimization

## محل انتشار:

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## خلاصه مقاله:

Distributed Systems (DS) are usually complex systems composed of various components and cloud is a common type of DSs. Reliability is a major challenge for the design of cloud systems and DSs in general. In this paper an analytical model to analyze reliability in DSs with regards to task allocation was presented. Subsequently, this model was modified and a new model to analyze reliability in cloud systems with regards to Virtual Machine (VM) allocation was suggested. On the other hand, optimal task allocation in DSs is an NP-hard problem, thus finding exact solutions are limited to small-scale problems. This paper presents a new swarm intelligence technique based on Cat Swarm Optimization (CSO) algorithm to find near optimal solution. For evaluating the algorithm, CSO is compared with Genetic Algorithm (GA) and Particle Swarm Optimization (PSO). The experimental results show that in contrast to PSO and GA, CSO acquires acceptable reliability in reasonable execution time.

## کلمات کلیدی:

distributed system, reliability, cat swarm optimization, cloud computing, task allocation, analytical model

## لینک ثابت مقاله در پایگاه سیویلیکا:

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