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Effective VM Placement Mechanism in Cloud Computing using Cuckoo Search Optimization

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Abstract



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Document Sections

- I. Introduction
- II. Related Works
- III. Problem Formulation and System Architecture
- IV. Proposed Effective VM Placement Mechanism by Using Cuckoo Search Optimization
- V. Simulation and Results

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Abstract: Effective VM placement mechanism is needed for Cloud Computing as incoming flow of tasks were dynamic when they are coming onto cloud console. Incoming requests for any cloud console were large in number then there is a chance of decay in quality of service. Quality of service will be degraded when these number of requests were not properly handled i.e. SLA violations and more number of migrations. Quality of Service will be directly affected by these parameters. Many of the authors addressed these metrics but still there is a chance to improve the VM placement in cloud computing. In this paper, we have used a nature inspired algorithm i.e. cuckoo search to design the VM placement strategy and we have used a threshold value to identify the physical host whet her it is overloaded, under loaded or balanced based on the utilization of CPU. Cloudsim toolkit is used as a simulator to conduct simulation and our proposed mechanism minimizes violation of SLA and there is a great improvement in makespan when it was compared with PSO and GA algorithms.

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☰ Contents

I. Introduction

Cloud Computing is one of the model which renders wide variety of services to its customers as flexible, rapid and scalable. Cloud models were into different areas named as health care, government organizations, education, transport and etc. Many of the corporate companies are looking for migrate their physical infrastructure onto cloud for the following reasons. •

No need of upfront investments

•

Spin up the virtual infrastructure in less time

•

Pay for the services which you have used

•

Security

•

Scalability.

•

Customized Service level agreements

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