



Optimization of resources in Cloud Computing using Virtual Machine Consolidation

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Abstract:

Underutilization and overutilization of Virtual Machine resources is a vital part of cloud computing. Migration of resources can handle it but it is necessary to predict the need for migration while also avoiding other issues. To tackle this the paper proposes using ACO (Ant Colony Optimization) for a well-planned VM migration while using different scheduling algorithms to reduce CPU overloading, minimizing the rate of SLA violations and to increase the energy efficiency. In this paper, we have researched some of the cloud consolidation and migration techniques such as Ant Colony Optimization and K-means Regression and summarized our findings. The proposed methodology includes initial allocation algorithm to allocate Virtual Machines (VMs) to Physical Machines (PMs) and thus optimizing the physical machines which are followed by the migration which makes use of ACO (Ant Colony Optimization) to migrate the Virtual Machine to the Physical Machine which is nearest thus saving time and bandwidth.

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