A Project Report On

"A GOSSIP PROTOCOL FOR DYNAMIC RESOURCE MANAGEMENT IN LARGE CLOUD ENVIRONMENT"

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Abstract

Now-a-days usage of cloud computing is on rise. Resource management is the core issue in any man made system, so is in the case of cloud computing. The problem of dynamic resource management is addressed in this project. Resource management is important because it has direct effect on cloud service's performance, efficiency and cost.

Usually a middleware architecture, which is presented between cloud users and cloud service, provides the mechanism for the resource management. Dynamic resource management is achieved by a Gossip protocol. The gossip protocol is a part of the middleware architecture. The resource management is carried out under system's CPU and memory constraints. The performance objectives i.e. Fair resource allocation and adaptation to dynamic load changes are achieved.

We first present a protocol that computes an optimal solution without considering memory constraints and prove correctness and convergence properties. Then, we extend that protocol to provide an efficient heuristic solution for the complete problem, which includes minimizing the cost for adapting an allocation. The protocol continuously executes on dynamic, local input and does not require global synchronization, as other proposed gossip protocols do. We evaluate the heuristic protocol through simulation and find its performance to be well-aligned with our design goals.