Abstract

Cloud computing has recently emerged as a new paradigm for hosting and delivering services over the Internet. Task consolidation problem in cloud computing systems became an important approach to streamline resource usage which improves energy efficiency. The task consolidation is also known as workload consolidation problem which is the process of assigning set of tasks to set of resources without violating time constraints. Three existing energy conscious heuristics such as ECTC (Energy-Conscious Task Consolidation) Task Consolidation Algorithm and MaxUtil (Maximum rate Utilization) Task Consolidation Algorithm and Bi-objective Task Consolidation algorithm offering different energy saving possibilities were analyzed in this study. The cost functions incorporated effectively capture energy saving possibilities and their capability has been verified by evaluation study. The Bi-objective Task Consolidation algorithm combines the two heuristics to construct the corresponding bi-objective search space. The efficiency of proposed algorithm was proved thought evaluation study consisting of different simulations carried out.
References


Index Terms

Computer Science

Algorithms
Keywords
    MaxUtil  ECTC  Bi-Objective Algorithms