Abstract

Efficient resource provisioning is the key challenge that brings the best quality of service which is beneficial both to the users and CSPs. Since cloud computing aims at providing adaptive provisioning as pay-per-use basis, dynamic resource provisioning is a critical research issue. The on-demand provisioning and resource availability in cloud computing make it ideal for executing scientific workflow applications. To ensure better performance, there is a need for auto-scaling. The problem of assigning resources to tasks and orchestrating their execution to preserve the dependencies of workflows is NP-complete. [2] Hence, no optimal solution can be found in polynomial time. NP-complete problems are often addressed by using heuristic or meta-heuristics approaches. This survey presents the existing auto-scaling techniques and meta-heuristics approaches for VM placements of cloud workflows.

References


11. Thanh-Phuong Pham, Juan J.Durillo, and Thomas Fahringer, “Predicting Workflow Task Execution Time in the Cloud using a Two-Stage machine learning approach”, IEEE Transactions on Cloud Computing. DOI 10.1109/TCC.2017.2732344


Index Terms

Computer Science Information Systems

Keywords
Workflows, resource provisioning, auto-scaling, meta-heuristics