

Towards a Resources Provisioning for Dynamic Workflows in the Cloud

Authors : Fairouz Fakhfakh, Hatem Hadj Kacem, Ahmed Hadj Kacem

Abstract : Cloud computing offers a new model of service provisioning for workflow applications, thanks to its elasticity and its paying model. However, it presents various challenges that need to be addressed in order to be efficiently utilized. The resources provisioning problem for workflow applications has been widely studied. Nevertheless, the existing works did not consider the change in workflow instances while they are being executed. This functionality has become a major requirement to deal with unusual situations and evolution. This paper presents a first step towards the resources provisioning for a dynamic workflow. In fact, we propose a provisioning algorithm which minimizes the overall workflow execution cost, while meeting a deadline constraint. Then, we extend it to support the dynamic adding of tasks. Experimental results show that our proposed heuristic demonstrates a significant reduction in resources cost by using a consolidation process.

Keywords : cloud computing, resources provisioning, dynamic workflow, workflow applications

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