

## **Workflow Scheduling and Resource Allocation for Cloud-based Execution of Elastic Processes**

Reference:

P. Hoenisch, S. Schulte, S. Dustdar, "Workflow Scheduling and Resource Allocation for Cloud-based Execution of Elastic Processes," in 6th IEEE International Conference on Service Oriented Computing and Applications (SOCA 2013), Kauai, HI, USA, 2013, pages 1-8.

Abstract:

Today's extensive business process landscapes make it necessary to handle the execution of a large number of workflows. Especially if workflow steps require the invocation of resource-intensive applications or a large number of applications needs to be carried out concurrently, process owners may have to allocate extensive computational resources, leading to high fixed costs. Instead, process owners could make use of Cloudbased computational resources, dynamically leasing and releasing resources on demand, which could lead to lower costs.

In the work at hand, we propose a resource-efficient workflow scheduling algorithm for business processes and Cloud-based computational resources. Through the integration into the Vienna Platform for Elastic Processes and an evaluation, we show the practical applicability and the benefits of our contributions. Specifically, we find that our approach reduces the resource demand if compared with an ad hoc approach.