BPM@Cloud

Preface of BPM@Cloud 2017

To reduce costs as well as allow a more flexible provisioning of their business processes (BPs) and services, organizations are continuously thinking of moving to the cloud. However, most of them do not have the appropriate expertise for performing this move. As such, there is a need for platforms which are able to realize the respective methods, techniques, and algorithms that provide the appropriate cloud-based support level to these organizations. This support level should enable organizations to check which parts of their business processes should be moved to the cloud as well as facilitate bridging the gap between the business and IT level. Moreover, it should assist in the allocation, publishing, execution, monitoring, evaluation, and adaptive provisioning of these BPs, thus catering for their appropriate management based on the four main life cycle activities of BP design, allocation, execution, and evaluation. By moving and offering BPs in the cloud, the notion of BP as a service (BPaaS) is realized, which is projected to become quite profitable for the organizations participating in its value chain that can play the role of brokers, BPaaS management platform operators, or software developers. Thus, BPaaS not only caters for migrating existing BPs in the cloud but can also become a novel exploitation product in the cloud stack that will further boost the adoption of cloud computing.

This was the first edition of this workshop — the First International Workshop on Business Process Management in the Cloud (BPM@Cloud 2017) — which was held in Oslo, Norway, on September 27, 2017, as an ESOCC satellite event. The main goals of the workshop were the following: (a) to bring together experts on business process management (BPM) and cloud computing from both academia and industry; (b) to become a medium for thorough discussion and collaboration between the workshop participants; (c) to enable the dissemination of work that better promotes the notion of BPaaS; (d) to foster the multidisciplinary collaboration between different research areas in cloud computing and BPM to realize the notion of BPaaS; (e) to identify new challenges that can direct the research to be conducted over BPM in the cloud in the near future. New versions of the workshop are planned to be organized in the next few years, preferably as satellite events of ESOCC.

In this first edition of this workshop, the following three full papers were accepted for presentation.

The first paper "Toward PaaS Offering of BPMN 2.0 Engines: A Proposal for Service-Level Tenant Isolation" by Majid Makki, Dimitri Van Landuyt, and Wouter Joosen explores the main security issues related to the offering of BPMN2-compliant workflow engines in multi-tenant PaaS environments and proposes a service-level tenant isolation framework to address them by also discussing the technical feasibility of its implementation.

The second paper "CEP-Based SLO Evaluation" by Kyriakos Kritikos, Chrysostomos Zeginis, Andreas Paravoliasis, and Dimitris Plexousakis discusses the main issues involved in cross-layer cloud application monitoring and proposes a complex event processing

(CEP) SLO evaluation framework to support the rapid and scalable identification of complex event patterns that signify complex problematic situations which can be addressed via the triggering of cross-layer adaptation workflows.

The third paper "Toward Business-to-IT Alignment in the Cloud" by Kyriakos Kritikos, Emanuele Laurenzi, and Knut Hinkelmann discusses the main issues involved in the design of BPaaS services and proposes a novel semantic framework which is able to align high-level, domain-specific business processes to service-based technical workflows. The novel features of that framework include a questionnaire-based approach for the discovery of services matching the user requirements at the business level as well as a workflow concretization method which takes into account both technical requirements as well as the message compatibility between the discovered services in order to find the most optimal service agglomeration that realizes the functionality of the technical workflow.

In addition to the presentation of the accepted papers, an invited talk titled "Business Processes and Smart Devices — A Marriage of Convenience?" was jointly organized with participants of the Cloudways workshop focusing on the challenges and perspectives with process modelling in the cloud, looking specifically also at edge and IoT as a context. The presentation was given by Prof. Pierluigi Plebani from the Politecnico di Milano, Italy.

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Kyriakos Kritikos

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