DOI 10.12694/scpe.v17i4.1199
Scalable Computing: Practice and Experience ISSN 1895-1767
Volume 17, Number 4, pp. iii–iv. http://www.scpe.org

INTRODUCTION TO THE SPECIAL ISSUE ON NEW APPROACHES FOR INFRASTRUCTURE SERVICES

The special issue is dedicated to the current research and innovation challenges encountered at infrastructure -as-a-service level generated by the desire to improve the user experiences and the efficient use of the available resources. The current trends are including the integration of special devices from high performance computing ones to mobile devices, the design of decentralised service-oriented systems, the improvement of the virtualization technologies, the overcome of portability and interoperability issues, or the automation the organisation and management of the back-end resources. Cloud-based applications from the fields of Internet-of-Things and Big Data are expected to challenge the new services.

The first paper, entitled "SLA-based Secure Cloud Application Development" reports an implementation of the concept of security service level agreements (Security SLAs) and presents a framework that allows application developers to intervine in the secure provisioning of cloud resources and services.

The second paper, with the title "Impact of Single Parameter Changes on Ceph Cloud Storage Performance", shows how a change of a global parameter of Ceph distributed file system can effect the performance for a range of access patterns when tested with an OpenStack cloud system.

The third paper, entitled "Multi-objective middleware for distributed VMI repositories in federated Cloud environment", explains the design of easy-to-use interface capable of receiving unmodified and functionally complete virtual machine images from its users, as well as of a system that transparently distribute them to a specific Cloud infrastructure in a federation achieving an improved quality of service.

The fourth paper, with the title "Architecture of a Scalable Platform for Monitoring Multiple Big Data Frameworks" is dedicated to a new, distributed, scalable software platform able to collect, store, query and process monitoring data obtained from multiple Big Data frameworks.

The fifth paper, entitled "Exposing HPC services in the Cloud: the CloudLightning Approach", refers to a novel a self-organizing and self-managing cloud service delivery system with capabilities to deliver dynamic and tailored services offered by coalitions of heterogeneous cloud resources.

Prof. Dana Petcu, West University of Timisoara