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Democratization in Science and Technology through Cloud Computing

Dr. Ivona Brandic

Assistant Professor at the Distributed Systems Group, Information Systems Institute, Vienna University of Technology (TU Wien)

תקציר:

Currently, many data centers are adopting Cloud Computing technology to achieve high performance and scalability for their applications while maintaining low costs. Service provisioning in the Cloud is based on a set of predefined non-functional properties specified and negotiated by means of Service Level Agreements (SLAs). Cloud workloads are dynamic and change constantly. Thus, in order to reduce steady human interactions, self-manageable Cloud techniques are required to comply with the agreed customers' SLAs. In this talk we discuss flexible and reliable management of SLAs, which is of paramount importance for both, Cloud providers and consumers. On the one hand, the prevention of SLA violations avoids penalties that are costly to providers. On the other hand, based on flexible and timely reactions to possible SLA violation threats, user interaction with the system can be minimized enabling Cloud computing to take roots as a flexible and reliable form of on-demand computing.

Dr. Ivona Brandic is Assistant Professor at the Distributed Systems Group, Information Systems Institute, Vienna University of Technology (TU Wien). She received her PhD degree in 2007 and her venia docendi for practical computer science in 2013 - both from Vienna University of Technology From June to August 2008 she was visiting researcher at the University of Melbourne, Australia. Dr. Brandic is on the Editorial Board of the IEEE Transactions on Cloud Computing and the Springer Journal on Scalable Computing. In 2011 she received the Distinguished Young Scientist Award from the Vienna University of Technology for her HALEY project on Holistic Energy Efficient Hybrid Clouds. Her interests comprise Service Level Agreement and Quality of Service management in large scale distributed systems, autonomic computing, workflow management for scientific applications, and energy efficient large scale distributed systems (Cloud, Grid, Cluster, etc.). She published more than 50 scientific journal, magazine and conference publications and she co-authored a text book on federated and self-manageable Cloud infrastructures.