Informatics Research
Institute of Toulouse

**Tuesday 10 January 2017**
**14h00 – 15h30**
**INP-ENSEEIHT, Salle des thèses**


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# A new dimension of Cloud Governance

Seminar


*Abstract:* The diversity in the way in which different cloud providers offer their services, give their SLAs, present their QoS, or support different technologies complicates the portability and interoperability of cloud applications, and favors vendor lock-in. After the proposal of unified APIs for IaaS services, unified APIs for PaaS services, and the variety of proposed cross-cloud application management tools, we propose going one step further in the unification of cloud services with a management tool in which IaaS and PaaS services are integrated into a unified interface. We provide support for applications whose components are to be deployed on different providers, indistinctly using IaaS and PaaS services. The TOSCA standard is used to define a portable model describing the topology of the cloud applications and the required resources in an agnostic, providers-and-resources-independent way. To change the service on which any of the modules of an application is to be deployed, whether it be IaaS or PaaS, we just need to change its location by picking from the catalog. We provide insights into our implementation on Apache Brooklyn.

An effective Cloud Governance needs not only a cloud-agnostic deployment management, but also an appropriate predictive analysis before the real deployment is made. However, current predictive methods are not effective when used on self-adaptive systems, and specifically when applied to cloud environments, because of its complexity and dynamic nature. We are now working on a preliminary contribution to this problem, based on an e-Motions reimplementation of Palladio on which we define different adaptation mechanisms modelling cloud-specific behaviour. Our approach is based on simulation, and we are exploring the use of statistical model checking tools, and in particular those developed for graph-transformation systems.



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