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Today, Cloud computing has evolved to an easy to use infrastructure provisioning. In this respect, Cloud computing fulfils its promise to provide a more flexible and cost-effective approach delivering infrastructure services than traditional IT services. However, cost-effectiveness and flexibility are foiled when the Cloud customer starts using commercial software on the acquired infrastructure resources since both the licensing technology and the business models of the independent software vendors (ISV) are not in line with the Cloud computing paradigm. Running software license-protected commercial applications in Infrastructure as a Service (IaaS) or Platform as a Service (PaaS) Cloud environments is still an issue that is not resolved in a satisfying way with benefits both for the independent software vendor (ISV) and its customers. The current technology and contracts force the customer to restrict the use of license-protected applications to internal private Clouds without the possibility of Cloud bursting or the use of public and federated Clouds. The ISV on the other side is faced with increased usage of its software under the same yearly flat rate. Although there have been a few bilateral agreements between ISVs and Cloud providers in the past to allow customers of these ISVs to run some of the ISVs’ license-protected applications in Clouds of certain providers a general solution is still lacking.

The objectives of the work presented are
- facilitating the use of license protected software in Clouds,
- increasing the flexibility of end-users to run their commercial applications in the most suitable and/or less costly environment,
- protecting the IPR of the ISVs,
- laying the foundations for new business models of ISVs
- achieving sustainability through the Fortissimo Marketplace

by providing a novel software licensing and license management technology that is designed for todays distributed computing infrastructures.

We will present the corresponding research and development results from the European project OPTIMIS. The work in OPTIMIS is using the results of the earlier European project SmartLM as the base-line for developing software licensing and license management for the needs of Cloud computing. The OPTIMIS results extend the prototype for use in multi-Cloud environments, both in form of delegation of already
purchased on-site licenses to the Cloud and with authorisations for individual application executions in the Cloud. The approach supports both the traditional yearly flat rate licensing and pay-per-use approaches, which are more appropriate for agile Cloud usage.

Finally, the approach has been validated in two experiments of the European funded project Fortissimo (Enabling European Small and Medium Enterprises (SMEs) in the manufacturing sector to benefit from high-performance digital simulation and modelling). Within the experiments a one-stop-shop solution for ISVs has been developed allowing an ISV to offer its SME customers a customised infrastructure needed for simulations in a Cloud environment. The offering is based on a pay-as-you-go model that requests the SME only to pay for resources (including temporary software licenses) actually required to perform the simulation work needed for its business. To contribute to sustainability the solutions developed will be available as offering in the Fortissimo Marketplace.

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