

451 Market Insight Service	Euro Report - 29 July 2009
SmartLM's flexible licensing virtualization technology makes licenses mobile objects	
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Traditional licensing models focus on software used on computing resources that belong to a single organization. Licenses are usually bound to hardware, and are provided on the basis of named users, hostnames, or sometimes as a site license for the same admin domain of an organization. When it comes to distributed environments and virtualized infrastructures, we run into trouble. Software manufacturers need to change the way licensing works and use flexible and non-hardware-based licensing solutions that better fit into a virtual environment.

The EU-funded SmartLM project is developing a generic and flexible licensing virtualization technology based on standards, and integrating new service-oriented business models. One of the main goals, and the biggest challenge, for SmartLM is to balance customer needs and vendor requirements. The organizations that run the project are Atos Origin, Fraunhofer SCAI, Jülich Research Centre, Cineca, INTES GmbH, Ansys, LMS International, T-Systems-SfR, Centro de Supercomputación de Galicia, Gridcore AB and The 451 Group. The project kicked off in February of 2008, with a duration of 30 months.

the SmartLM approach

The SmartLM approach consists of providing platform-independent access, treating and implementing software licenses as services. The core part of the SmartLM software is the license service. Licenses are managed through the license service, which is not a monolithic component, but a bag of services, based on tokens, that grant the required flexibility. The license service is able to adapt to distributed environments and works with loosely coupled systems, because the software licenses themselves, as Web service resources, become adaptable and really dynamic.

Licenses are managed as agreements, extending the conventional service-level agreements (SLAs) made between sellers and buyers (negotiation), and are dynamic to support agreements that change over time (renegotiation). SmartLM allows licenses to be reserved in advance. In practice, that means licenses are available when needed, but aren't blocked when the application is waiting for execution.

In contrast to most of the existing license management systems, SmartLM integrates a modular offering for accounting and billing, enabling a comprehensive analysis of license usage and allowing price determination and budget control when the license is requested. Aspects of security have also been examined with special care. These aspects are related to the market players involved as well as the license mechanism itself.

An important challenge was to develop a license mechanism able to generate tokens that decouple the execution environment from the site that hosts the license server. It means not only to extend the actual license management approach, but to make the license server implementation part of grid and cloud systems. That, in turn, implies some other key features – such as the capability to work with an unreliable network or with no connection at all during the application execution, an extended trust management able to deal with the different administrative domains, and flexibility to cope with the requirements of the various players involved in the process.

new business models

As already mentioned, the use of licensed software in distributed environments and virtualized infrastructures is limited in many ways. Traditional licensing practices are under pressure from a variety of alternative options and are tightening vendors' profit margins, pushing down licensing costs and giving more negotiating power to users. Currently, the landscape is quite chaotic, with providers randomly introducing new models. Through close collaboration with a wide range of stakeholders – software vendors, application providers, end users – a few potential usage-based models have come up. They look at different aspects of software licensing.

Featuring the ASP – In this model we find the ASP offering various solutions to various problems. We have pinpointed and analyzed five cases – customer license housing, embedded license (dependant software vendor), license re-direction (external consultant), license aggregation, and license reselling – that companies may most frequently encounter in real operations. In all of them, the ASP plays a central role, being a reseller of hardware, software and services. The introduction of the ASP can be very advantageous for both the ISVs and the end users. From the ISV's point of view, the ASP can generate additional business offering licenses and hardware resources for end users on demand (competitive resource provisioning). Making use of economies of scale and SmartLM features, the ASP can make existing models (e.g., short-term licenses) more attractive to customers, and introduce new ones the ISV is not willing to offer, such as pay-per-use for license reselling.

License extension – The license extension model allows end users to extend their licenses in their LAN and distributed environments on demand, e.g., for workload peaks. The license server takes care and simplifies the process of the extension of licenses; for example, in terms of accounting and license administration. These mechanisms give end users more flexibility and value, and at the same time generate additional revenue for ISVs and ASPs.

License aggregation – Most contracts between ISVs and end users restrict the license usage to LAN. The license aggregation model allows the use of licenses that belong to different sites and brings them together to form a single license token. These licenses can come from either the ISV or the ASP. End users gain more flexibility and value and get access to huge hardware resources. The ASP provides these hardware resources to the end user and generates additional business for the ISV.

Hardware-independent pricing model and feature-based accounting – The hardware-independent pricing model makes the license price effectively independent of the underlying hardware, enabling a cost-efficient use of licenses. With the introduction of a set of micro-benchmarks, the user is not tied to hardware anymore, so is not punished for slower hardware. All users can get the highest benefit from their licenses. This benchmark model leads us to a more general approach, to a feature-based accounting. The core issue here is letting the application define the features and set what it wants to charge for. As opposed to the time approach, the feature-based approach is really independent of the machine where the application is being executed.

elasticLM, the product

The SmartLM consortium has named its future 'elasticLM.' ElasticLM is an advanced license management product with a number of innovative features that differentiate it from current license practices.

elasticLM's major innovative features

Licenses can be used to run apps in grid and cloud environments no matter whether there is network connectivity –during application run- to access the site that hosts the license server that issued the license.	Budget limitations are checked and enforced when the user requests a license.
License usage can be easily and better tracked as elasticLM provides access to and management of all licenses owned by a site.	elasticLM uses sophisticated security mechanisms to combat illegal license use.
elasticLM supports the definition of local policies for license usage addressing site-specific needs. These policies are evaluated in addition to the embedded policies of the ISVs.	elasticLM supports co-scheduling of licenses and computational resources, and re-negotiation of license terms at run time.
An accurate and user-specific price is calculated beforehand based on a number of configurable parameters.	Licenses can be booked in advance for later use and are coordinated with the availability of resources.
elasticLM's advanced accounting & billing system, based on effective usage, adjusts the accounting information after license usage.	ASPs can provide the user with access to applications without buying additional licenses.

The competitive landscape includes Acreso Software's widely used FLEXnet, SafeNet's Sentinel RMS, Reprise Software's RLM and X-Formation's LM-X. Also, we find users employing their own management models, and ISVs that support their own management schemes.

The launch date and the terms under which elasticLM will be released are not known yet. There are ownership and business model issues to be agreed on and, potentially, another round of private funding is needed to launch elasticLM in the market.

the 451 take

The software licensing issue is a complex one because transformation is going on at a macro level where a lot of money is involved. What has been happening and what can be expected is an evolution of license models, rather than a revolution. The goal and challenge is to balance customer needs and vendor requirements. In the past, end-user companies that wanted to extend the use of software to grid environments either paid up, or found a workaround.

The ability to proactively manage the use of software licenses based on business objectives is not a grid-only issue. Virtualized infrastructures and distributed environments (including cloud computing) call for flexible and non-hardware-based license models that support service-oriented business models. SmartLM's offering brings along improved customer choice with a model that makes licenses mobile objects.