

*White Paper
for Software Publishers*



***Innovative Approaches to
Software Digital Rights
Management***



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Innovative Approaches to Software Digital Rights Management

White Paper for Software Publishers

Overview

Software DRM (Digital Rights Management) solutions have been available for well over two decades. In early years, these solutions focused on preventing illegal use of software and reducing software piracy. In subsequent years, licensing was introduced, still as a means to control the number of distributed copies and prevent loss of revenue. It was always about preventing, inhibiting, restricting and controlling.

More recently, when the economic climate became more challenging, and the Internet introduced and enabled new sales and distribution methods, software became much more accessible, and tough competition dictated the desire to be “first to market.” Software publishers began demanding solutions to enable greater and wider access to their software, while still preventing piracy and securing their revenue.

From Inhibitor to Enabler

Acknowledging the need to improve accessibility and to meet a broader range of demands from software publishers, software protection and licensing solutions have clearly shifted focus from that of inhibitors to that of enablers. In fact, when you investigate the software security industry, most products such as firewalls, anti-virus, identity and authentication solutions, content filtering, and so on are inhibitor solutions that prevent loss.

Software protection and licensing solutions are the only security products that enable business growth in addition to preventing loss.

Software protection and licensing solutions are the only security products that enable business growth in addition to preventing loss. New licensing functionality enables software publishers to offer flexible and attractive software packages and pricing models that subsequently facilitate broader market reach and deeper account penetration. As a result, business grows.

Traditional Solutions

Commercial software protection and licensing systems are divided into two major categories – hardware-based solutions and software-based solutions.

Hardware-based Solutions

Known as dongles or SLATS (Software Licensing Authentication Tokens), these external USB devices contain some form of intelligence and connect to any USB port on the PC in order to enable access to a protected software application. The software application and its licenses are locked to the USB device. Hardware-based solutions offer the highest level of protection since security and licenses are managed by the hardware device itself. The hardware is virtually impenetrable and is only accessible by the software publisher. In addition, hardware-based solutions offer portability – since the protected application can be used on any machine to which the key is connected. For simplicity, this paper refers to a hardware-based solution as hardware key.

Software-based Solutions

Software-based solutions vary in their technology and offer anything from serial number protection to product activation. Software licenses are locked to an end-user's PC where security, if it exists, is also implemented. Product activation offers the highest level of protection amongst the software-based protection solutions. However, generally software-based solutions are weaker than hardware-based solutions. Security and licenses are managed in software on the end-user's PC – over which the software publisher has no control. The main advantages of software-based solutions are quick delivery (e.g. via the Internet) and fast deployment of protected software since all components are digital. For simplicity, this paper refers to a software-based solution as software key.

Both hardware-based and software-based solutions have clear advantages and disadvantages. The decision to choose one or the other goes beyond protection needs. Business considerations are much stronger influencers. In most cases, the constraint of having to select a single solution – either hardware key or software key – presents an obstacle, ultimately creating business barriers for software publishers. Traditional solutions only allow pre-packaging the software to include commercial terms and a fixed level of built-in protection. They do not offer options for modifying these specifications without re-engineering the software itself.

At times, publishers will decide to use both types of solutions – the hurdle then becomes even higher, since the solutions are offered by different suppliers.

From Enabler to Business Expander

The evolution from an inhibiting to an enabling software protection and licensing solution is insufficient in today's business environment. When protecting and licensing their software, software publishers must consider a broad variety of factors in order to grow their business. Such considerations include the type of software being sold, its price, target markets, potential end-users, competitive advantage, piracy rates in the various sales regions, minimizing costs, and so on.

A software protection and licensing solution that does not offer business flexibility cannot address these issues. Therefore, the transition from inhibiting to enabling must extend to provide applications with business-expansion type protection, and to offer a comprehensive solution that manages a publisher's software rights and facilitates new business opportunities.

An Innovative Approach

Clearly, traditional Software DRM solutions – as enabling as they may be – are insufficient for today's software publishing business requirements. The need increases for solutions that provide a flexible, customizable and scalable infrastructure for secure software commerce and rights management. Because the choice to use a hardware-based or software-based solution is entirely a business decision, new approaches must be developed that will empower business decision makers to choose their preferred solution, or a combination of both.

Of paramount importance to a business is the implementation of a straightforward solution that integrates smoothly with the working processes of a software publisher's organization. The solution must cater to all processes from software development through fulfillment, distribution, deployment and use in the field. To accommodate and support these processes, a software protection and licensing solution must enable engineers to integrate security strategies easily and quickly, and to facilitate product and marketing managers independently choosing the level of protection, license models and types of keys that cater to various business needs.

Such a solution should therefore:

- Combine hardware-based and software-based protection and licensing into a single solution that enables software publishers to tailor DRM to their specific needs.
- Separate the engineering and business processes associated with the implementation of a DRM solution.

The following sections discuss the various challenges software publishers face in protecting, licensing and selling their software. They also discuss how to maximize the benefits of an innovative solution that combines hardware- and software-based DRM capabilities, while keeping the processes associated with a product's life-cycle fully separate and independent.

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Time to Market

Software publishers cannot afford the cost of being late. Getting to market on time increases profits in the long run. When implementing a traditional DRM solution, software developers and testing teams need to undertake engineering tasks that are not within their core competence. These tasks include integrating protection strategies, translating sales and business rules into software behavior, and hard coding them in the application. Additional tasks engineers and testers have to perform include maintaining multiple versions to comply with various product packages and modules, and constant adherence to market demands relating to product accessibility, usage patterns and business logic. All of these tasks impede time-to-market.

Software publishers will benefit by selecting a DRM solution that does not impose many of these tasks on their engineering teams. They require a solution that enables the release of a single protected application binary and that doesn't require additional development cycles – or even total re-engineering of the software – each time that new business rules are introduced.

A quick time-to-market DRM solution is one that provides engineers with all the tools required to implement protection strategies quickly and effectively, while completely releasing them from having to implement business logic. This means that engineers can remain oblivious to factors such as the license models to apply or the type of key (hardware or software) to deliver with the software to the market. A DRM solution that facilitates decisions and implementation of these factors by business decision makers ensures engineering productivity and enables faster time-to-market.

Creating and Addressing Business Opportunities

If development and business processes are completely separate, when engineering release dates arrive, product and marketing managers can step in to independently apply commercial logic. Various license models can be paired on-the-fly with a hardware or software key to create market-driven software packages.

The type of key, which dictates the level of anti-piracy and protection for license terms, can be determined according to regional piracy rates; software price and budget constraints; software versions and features; target audience; customer usage needs; software distribution methods, and more. A flexible DRM solution should therefore enable business decision makers to select which protection key to use and which licensing model to implement. The hardware key option can be selected for protecting software distributed in high risk territories, to protect expensive software, or when portability of licenses is mandatory. The software key option can be selected for inexpensive versions of the software, or when software is sold over the Internet.

Licenses can be determined according to market segments (e.g. professionals vs. students); pricing schemes that yield competitive advantage; sales models that ensure recurring revenue streams; and policies that enable publishers to sell according to their customers' buying preferences.

A flexible DRM solution should therefore enable business decision makers to select which protection key to use and which licensing model to implement.

“Software protection and licensing are all about flexibility – the ability to provide software developers with numerous distribution choices and options for securing their products while paving the way for increased sales,” said Sally Hudson, research director at IDC.

When all these options are available within a single DRM solution – and without the need to reopen engineering work plans for implementation – software publishers can quickly and effectively address new opportunities that ultimately expand their business.

Broader Market Reach

Super Distribution and *Trialware* are not new concepts. In both cases, although the software is protected, end-users are able to try the software before they buy it and to share it with colleagues and friends. This does not mean, however, that software is given away free. With *Super Distribution*, when the software is passed from one machine to another, the copied version resets as restricted trialware that can be installed and used for a limited grace period. The focus with this solution is clearly on increasing sales conversion rates and shortening sales cycles by enabling rather than inhibiting.

Trialware and *Super Distribution* are traditionally available only with software-based protection and licensing solutions. A hardware key is not an option, since it forms an obstacle in both cases. It is costly for *Trialware* versions that are shipped in substantial volumes, and by definition it prevents *Super Distribution*.

In due course, when an end-user decides to buy after having initially installed the software as *Trialware*, the software and licenses are locked to the PC. For software publishers who wish to implement a hardware-based protection solution, this creates an enormous limitation. It immediately necessitates the need to maintain both a marketing version that is protected by a software key, and a fully-functional version that is protected with a hardware key.

A DRM solution that combines hardware-based and software-based capabilities in its core technology can offer powerful marketing tools such as *Trialware* and *Super Distribution*, regardless of the key that eventually allows access to the fully functional version. An all-in-one solution can offer both strong marketing tools and provide software publishers the freedom to choose the ultimate key (hardware or software), according to practical commercial considerations.

Optimal Integration

In their attempt to create new business opportunities and broaden market reach, software publishers expand their offerings with increased complexity in packaging and licensing. Furthermore, software protection and licensing does not stop at the software publisher’s organization, it extends to the field when end-users activate software, and receive new licenses or license extensions in the form of a hardware key or electronic license. Therefore, back-office license management and tracking becomes a necessity.

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A DRM solution becomes a business-expanding solution when fulfillment is taken into consideration and fully automated. To reduce complexity in packaging and licensing and increase efficiency, software publishers must have full access, control, and reporting capabilities across multiple licensing schemes and different protection keys. Automatic product activation must also be possible without necessitating Customer Support team intervention. These features enable the ability to leverage license upgrades and maximize renewal revenues, while reducing fulfillment and support costs – without involving engineering staff.

Security vs. Usability

Software DRM solutions should encompass three distinct areas: copy protection (anti-piracy), IP protection, and licensing. As mentioned at the beginning of this paper, software protection solutions were primarily developed to protect what rightfully belongs to the software publisher. Innovative approaches that combine hardware and software-based protection capabilities must not, under any circumstances, compromise security. A reliable all-in-one DRM solution enables selection of a software key for one product or module, without putting at risk other products or modules that are protected with a hardware key.

An unprotected license is a license open to theft. Therefore, an advanced DRM solution should also implement innovative technology that protects the licenses and their terms – whether the licenses are stored in a hardware key or on an end-user's PC.

A combined hardware and software-based DRM solution must also ensure reliable protection of a software publisher's Intellectual Property. Trade secrets, professional know-how, and complex algorithms are all embedded in software code. Their exposure to competition can incur vast losses.

However, the human factor is paramount when designing any protection system. Usability and security, it is often said, have an inverse relationship. A practical DRM solution must consider the tradeoffs between security and usability to properly support paying customers and authorized users. Confinement and restriction could render a software application unusable, resulting in customer dissatisfaction and loss of revenue.

A seamless end-user experience must be implemented during software and license installations. Furthermore, superior quality and transparency are imperative. A hardware key must be highly reliable to ensure virtually no application downtime. A software key must correctly identify and manage characteristic changes in the PC.

One Plus One Must Equal One

A combined DRM solution that merely “glues” together hardware and software-based protection and licensing solutions results in a cumbersome and complex system. Using new approaches and advanced technology, the system must be designed at its core to support both hardware and software-based solutions and to enable transparent transition from one to the other. Security

and licensing must be constructed in a manner that enables implementation without regard to the type of key that is ultimately used. Furthermore, role-based tools that can be used independently must be available to facilitate processes performed by various players in an organization (e.g. engineering, marketing, fulfillment).

“With far fewer limitations surrounding the delivery of software, publishers and developers are armed with a confidence that licensing and protection are not an obstacle to success. Solutions such as the new Aladdin HASP SRM offer a mixture of hardware- and software-based protection choices. This creates a unique set of options for software security and license lifecycle management that can be combined and altered to fit specific customer and business needs,” said Sally Hudson, research director at IDC.

Summary

In the transition from enablers to business-expanders, DRM solutions must continue to offer strong anti-piracy features and IP protection to prevent revenue loss and guarantee recurring ROI. At the same time they must leverage licensing capabilities to amplify secure software commerce. A promising DRM solution gives software publishers unmatched business flexibility that supports their software product throughout its life-cycle and optimizes the integration of DRM in the organization, ensuring quick time-to-market, increased profitability, and reduced Total Cost-of-Ownership.

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About Aladdin Knowledge Systems

Aladdin Knowledge Systems Ltd. (NASDAQ: ALDN), founded in 1985, is a global provider of security solutions. Its security products are organized into two segments: Software Digital Rights Management (DRM) and Enterprise Security. Aladdin's Software DRM products allow software developers and publishers to protect their Intellectual Property, increase revenues through licensing, and reduce losses from software piracy. Aladdin's Enterprise Security solutions enable organizations to secure their information technology assets by controlling who has access to their networks (identity and password management) and what content their users can utilize (proactive content security). Aladdin has offices in 12 countries, a worldwide network of channel partners and holds numerous industry awards for innovation and reliability. For more information, please visit the Aladdin Web site at www.Aladdin.com.

Aladdin's HASP SRM is a Software Digital Rights Management system that combines hardware-based and software-based protection and licensing in an all-in-one solution. First in the industry, this innovative combination empowers software publishers with the ongoing flexibility to mix and match protection and licensing capabilities to best fit their business needs.



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