Microsoft® Software Licensing and Protection (SLP) Services

ISVs: Bridging the Gaps Between Protection, Agility, and Customer Satisfaction

White Paper

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The Independent Software Vendors' Challenge

Maintaining the delicate balance between the cost of protecting your software and delivering a simple, non-disruptive experience for your users is a significant challenge.

Sometimes it seems like software developers are engaged in a never-ending battle to stay ahead of the "bad guys." Every time a new technique is developed to protect software from piracy, hackers are right there, ready and waiting to build an "exploit" to render it ineffective, often within just a few days—and an application, once it's hacked, opens the door to countless unauthorized installations. Applications built on the Microsoft® .NET framework benefit from the consistent platform and reduced deployment complications, but also suffer from weaknesses that make them particularly susceptible to reverse engineering.

But piracy is just part of the problem—a big part, certainly, with the *Fourth Annual BSA and IDC Global Software Piracy Study* published in 2007 estimating that independent software vendors (ISVs) lose up to one-third of their revenues to it every year—but it's not the only risk. A modern software application is the distillation of countless hours of algorithm development and often contains trade secrets that must be protected.

The desire to protect this investment is often at odds with the need to reduce costs, further complicated by increasingly sophisticated users who demand flexibility in how they evaluate, purchase, and use software in order to maximize their own return on investment.

Increasingly, customers want software packages with feature sets tuned to their specific needs, paying only for the functionality that they use and increasing their return on investment. But such difficult-to-implement, variable-use models are difficult to manage through the product cycle and vastly complicate the process of doing business.

> **ISVs require an integrated, holistic solution and tools that address the challenges of protecting their intellectual property, adapting to changing business models, and offering their customers a seamless and non-disruptive experience.**

Ultimately, your ability to meet these complex and evolving needs translates into a perception of greater product value. You need user-friendly tools so that your sales team can quickly adapt to changing customer needs and grab a competitive advantage.

There are individual tools available to address some of these issues, but they can be very expensive, and developing solutions in-house is beyond the scope of many ISVs.

That is where Microsoft® Software Licensing and Protection (SLP) Services comes in. Microsoft wants to build a healthier software ecosystem, and understands that that ISVs require an integrated, holistic solution and tools that address these challenges, with a low barrier to entry so that even small publishers can realize the benefits.

Our suite of products can help you protect your software, while providing you the tools to give your customers what they want: flexible options to try, buy, activate, and upgrade your software. SLP Services reduces the effort necessary to enable those options by moving a lot of the tasks away from the development team and on to sales and marketing. At the same time, we enable new business models, such as pay-per-use, and utility based pricing, and provide a safe, easily-implemented mechanism to offer online distribution.

The SLP Services' Solution

The SLP Services suite of applications and services is built on a foundation of field-proven technologies aimed at helping ISVs manage their entire business life cycle: protecting their intellectual property (IP), innovating with new business models to respond to customer demands, and managing customers and assets to help improve operational efficiency and help increase sales and satisfaction.

These goals reflect the design philosophy for the Microsoft Software Licensing and Protection Services offering.

Protect Your Intellectual Property

Developing your software products represents a huge investment of time, resources, and money. But for such a valuable asset, software has been notoriously difficult to protect—be it from piracy or theft of IP. The following are common risks you might face as a software publisher:

- **User piracy:** A user makes an unauthorized copy of software for use at home, or gives that copy to a friend.
- **License noncompliance:** Many companies, often without realizing it, have more seats of software installed than their licensing agreement permits.
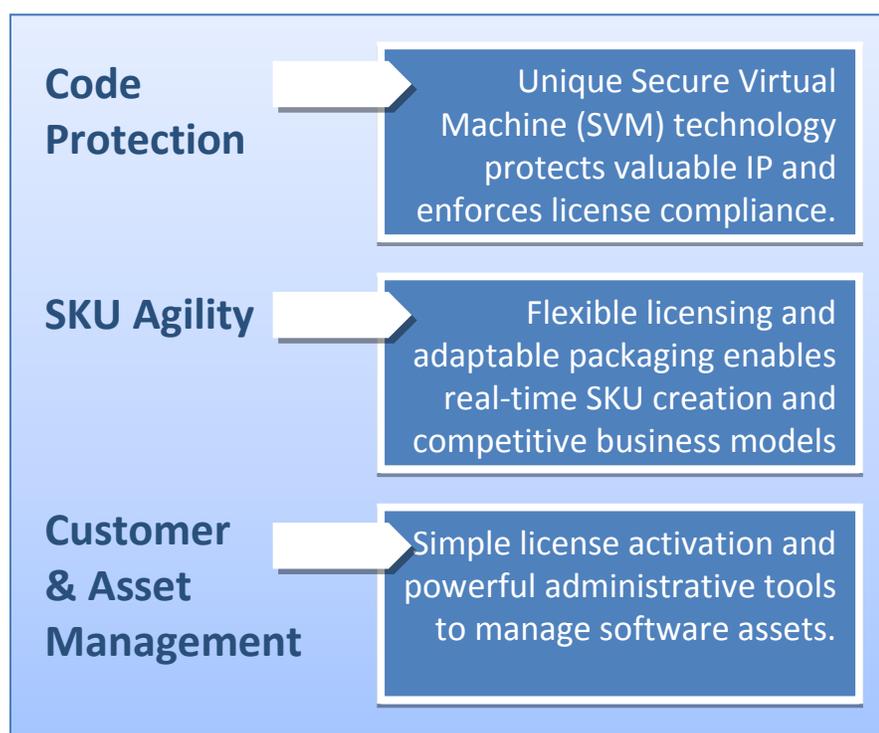
- **Internet piracy:** Users download illegal copies of software from Web sites or across peer-to-peer file sharing networks.
- **Hard-disk loading:** A hardware vendor sells new computers with illegal copies of software pre-loaded on the drive to make the computer more attractive to purchasers.
- **Software counterfeiting:** Pirates illegally duplicate and sell copyrighted, packaged software with the intent of duping the purchaser into believing it is a legal copy of the application.
- **Reverse engineering:** Valuable IP is reconstituted out of the compiled code, exposing trade secrets and enabling piracy.

Each of these risks contributes to a global epidemic of piracy and noncompliance. The *Fourth Annual BSA and IDC Global Software Piracy Study* estimates that worldwide the loss to the software industry is $40 billion dollars a year. With Internet availability and bandwidth increasing every year, protecting your intellectual property is no longer just an option—it's a requirement. ISVs must have a strategy to protect their intellectual property.

The SLP Services products put you back in control of your IP, through superior code protection and a licensing system that helps you enforce the restrictions you put in place regarding how your software can be used. In the long run, these protective measures can lead to reduced piracy rates, increased compliance, and recovered revenue. Further, the flexible licensing tools provided by SLP Services give you the opportunity to make legal copies of your software increasingly attractive as an alternative to pirated copies, helping further drive sales.

Code Protection → Unique Secure Virtual Machine (SVM) technology protects valuable IP and enforces license compliance.

SKU Agility → Flexible licensing and adaptable packaging enables real-time SKU creation and competitive business models

Customer & Asset Management → Simple license activation and powerful administrative tools to manage software assets.

Improve Agility

Discovering new ways to streamline development of your software, and improve both the agility and the efficiency of your business processes may translate into reduced costs, quicker time-to-market, and ultimately to help improve revenue and profits.

The rich SLP Services toolset enables these goals by letting you:

The SLP Services products put you back in control of your intellectual property, through strong code protection and a licensing system that helps you enforce the restrictions you put in place regarding how your software can be used.

- **Define SKUs after development:** Defining and publish new SKUs—whether it's a demo version of an existing package, "basic" vs. "full" SKUs, or a version with specific enabled functionality for a specific customer—is a costly proposition usually requiring code changes, rebuilding, retesting, and republishing your package. SLP Services moves this process out of development and into the hands of sales.

- **Collect usage data:** You should not have to guess about how your customers use your software. Real data from real users can provide insight into usage patterns to let you target future development efforts, and guide your sales and marketing teams toward offering the sets of features customers really use.

- **Support a wide variety of licensing models:** Create new sales and distribution channels, and give your customers what they really want—the ability to purchase, use, and upgrade your software offerings in ways that reflect the value they receive.

Flexible Feature Sets and SKU Agility

Customers want to purchase your products in ways that meet their specific needs. They are asking for greater flexibility in how they evaluate, purchase, use, and upgrade your software, and to pay only for the value they receive. This is why the industry is seeing an upsurge in Software as a Service (SaaS) and on-demand software models.

Many ISVs recognize these trends, and feel the pressure to be more nimble in how they define, package and distribute software—but creating SKUs to support different sales channels and revenue models can be an expensive proposition. Requests for new SKUs traditionally involve returning to the development team, making changes to the source code, testing those changes, building the SKU, and publishing it. It's no wonder then that despite the pressures that many ISVs feel, many customer requests go unmet.

SLP Services lets you respond to these challenges, with a low barrier to entry so that even small ISVs can meet the demands of their customers for multiple and varied SKUs. It moves the effort away from the development team and puts the ability to create new SKUs with custom feature sets and custom licensing terms directly in the hands of the people who talk to your customers—and that's *SKU Agility*.

Reduce Time-to-Market and Operating Costs

Streamlining processes, reducing costs, and speeding time-to-market for products: These are crucial challenges for the success of an ISV.

Building software is a critical link in a larger supply chain, and how well software licensing and protection mechanisms integrate with the larger processes is going to influence overall success. You need code protection mechanisms that are easily made part of your software development lifecycle. You need to integrate licensing with sales, Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) systems, and you need easy-to-use tools that translate software licensing flexibility into tangible customer benefits and sales.

SLP Services offers a suite of tools that can meet these needs. The Code Protector application is simple to use and can be run as a stand-alone application, or on the command line as part of your build process. The SLP Server 2008 and the hosted SLP Online Service provide a user friendly, Web-based interface for creating new SKUs and generating license, and a Web-service API that will enable integration with other enterprise systems.

> **Easily implement innovative and flexible new business models that meet customers' evolving preferences, including subscriptions, rentals, trials, and time- and feature-based usage control.**

Increase Sales, Improve Customer Satisfaction

Selling software in a shrink-wrapped box is no longer the only option, sometimes it's not even the desired one. Customers are increasingly comfortable downloading even the largest and most complex applications; and the 24/7, ubiquitous nature of the Internet means that your product can be seen and considered much more often than if it were only sitting on a store shelf. This is a sweeping change in how software is distributed, providing ISVs with a low-cost mechanism to attract customers and get your products into their hands.

It also provides exciting new opportunities to generate incremental revenues from existing customers who want on-demand upgrades. To meet the requirements of users who want to pay just for what they use, you can now offer a broader range customized feature sets and pricing models.

SLP Services gives ISVs improved control over their software provisioning systems in the following ways:

- Easily implement innovative and flexible new business models that meet customers' evolving preferences, including subscriptions, rentals, trials, and time- and feature-based usage control.
- SKU Agility lets you meet specific customer needs by tuning the feature set to match their exact requirements.
- Create, distribute, and sell licenses independent of the software bits, opening new sales channels.
- Transform software sharing into a lucrative form of peer-to-peer—or viral—product distribution.
- Attract new e-commerce channel partners through reseller purchasing models.
- Strengthen license security to make legitimate copies of your software more attractive than pirated copies and turn non-paying users into paying customers.

Traditionally, innovative licensing and usage models have been costly to implement correctly. Today, SLP Services can help smaller ISVs take advantage of these exciting new opportunities.

Sales models have changed in the software industry, and SLP Services provides a platform to package and distribute software according to feature set and usage needs, opening exciting new revenue opportunities for ISVs of all sizes.

Leveraging New Business Models

ISVs want to be able to offer multiple solutions through a variety of sales channels. Users reject confusing registration and activation processes, and often find buying additional features and upgrading online complicated.

To better meet the needs of their customers, ISVs require a solution that provides the ability to offer:

- A simple registration process
- On-demand purchasing
- Trial versions
- Time-, feature-, and component-use licensing

- The ability to share software with friends and colleagues

Traditionally, these licensing and usage models have been costly to implement correctly, making them impractical for all but the largest software publishers.

SLP Services wants to change the perception of software activation as burdensome and limiting to the customer and difficult to implement by the software developer. By providing an simple process that enables customers to purchase and use software just the way they want to, easily implemented and managed by the ISV, we believe that activation can be a positive part of the software lifecycle

How SLP Services Works

SLP Services helps you protect your intellectual property from competitors and pirates, it enables SKU Agility and flexible business models to help you increase sales, and it improves efficiency in both your development and business processes to help you get to market faster with the products your customers want to buy. It's a win-win situation for you *and* your customers. In this section, we'll take a closer look at how SLP Services works.
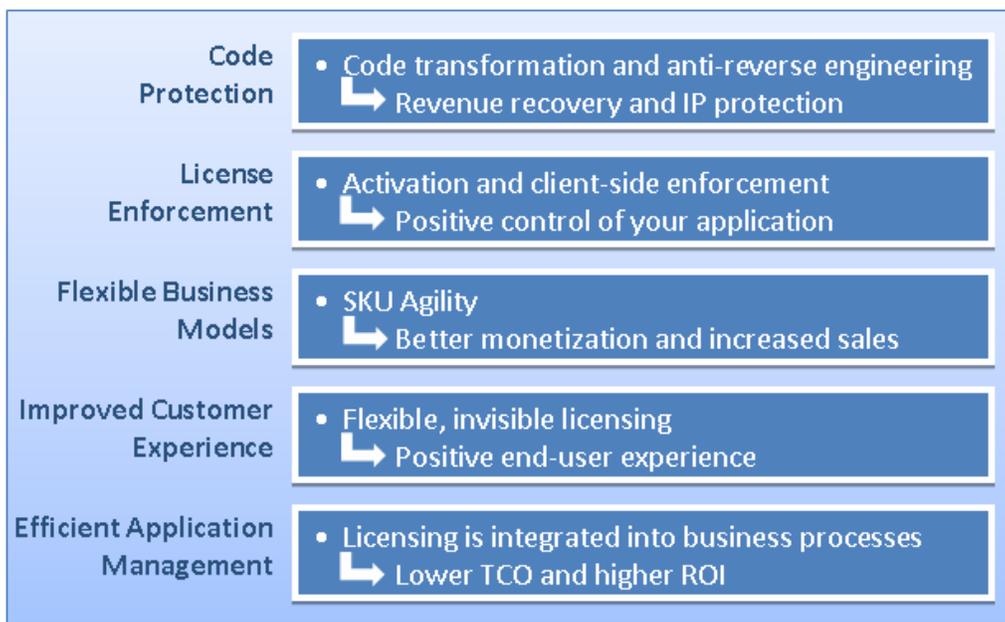
Planning

Sound business decisions are built around understanding, quantifying, and satisfying market needs, and our process begins there. What are your sales prospects and customers telling you they want? What

range of feature sets will meet those demands? The business features of an application are defined as licensable entities, and you can license each feature set separately in the SLP Services model. SLP Server 2008 or SLP Online Service is used to define the product and the features within the product.

Protection

Using SLP Code Protector and a SLP Permutation, you can protect portions of code from reverse engineering and relate product features you want to control access to with specific pieces of code. Many well-known code protection techniques—like hardware dongles and code obfuscation—have vulnerabilities that hackers and pirates have learned to exploit.

Microsoft .NET applications are also vulnerable. When a .NET language is compiled, the result is stored as Microsoft Intermediate Language (MSIL)—it is this that the Common Language Runtime (CLR) operates against. It is a powerful concept and a powerful platform—but it is also susceptible to reverse engineering.

The Code Protector application transforms the easily reversed MSIL into Secure Virtual Machine Language (SVML). Then the Secure Virtual Machine (SVM), which is part of the SLP Permutation and unique to each ISV or even each application, executes the SVML directly—without ever transforming it back into the original MSIL. Your application is now significantly less vulnerable to reverse engineering. And because each SVM is different, each version of the SVML is also different. This adds an extra layer of security—if one company's SVML is compromised, yours is not.

Packaging

After securing your code, you're ready to package your application for delivery. Using SLP Services, you can package and define your SKUs in multiple ways. You can define license parameters and customize your products along several dimensions:

- Feature set ("basic" vs. "professional" SKUs)
- Timing (demo versions good for 30 days, for instance)
- Usage control (A specific feature can only be used a set number of times.)

Flexibility is at the core of this multidimensional model, and being able adjust across them gives you SKU Agility—the capability, perhaps for the first time—to distribute, online software and licenses that have been customized for each customer.

Licenses can specify expiration dates, feature sets, a permitted number of activations, or a predetermined number of executions. Because licenses can be upgraded or modified, you can "lock" specific features and give users the option to purchase an additional license that unlocks those features if they want them.

All of this can be done through the SLP Services Portal, by the people directly in touch with your customers, sales and marketing, with no changes to the source code required—letting your development team concentrate on adding new features. SLP Services offers ISVs the ability to respond to customer needs rapidly, without requiring changes to the source code, and in ways that have been prohibitively expensive in the past.

A Practical Example

To further demonstrate the power of the SLP Services platform, we are going to work through the process using a "business traveler" application for Windows®.

Suppose that your company has produced this application, and it contains modules that provide business travelers with flight and travel information, world clocks, weather forecasts, and currency and measurement converters. You've already published this as a shrink-wrapped application and it is available in stores worldwide.

Your sales and marketing team has received feedback asking first for your software to be available for purchase online, and further there seems to be a strong desire for a "basic" version of your package that includes a reduced feature set at a lower cost.

At the same time, your management team has received disturbing reports that your application's home-grown license-protection mechanism has been circumvented and copies of your application are now being distributed online through peer-to-peer file sharing networks. Estimates put losses at 50% of received revenue, a loss of more than $1 million in sales this year alone —and that doesn't count the months of effort originally expended to develop the now-defunct license-protection technology.

You must tackle the complex challenges of meeting your customer's demands for a new version and online distribution, reducing losses due to piracy, and the market pressure to generate new revenue channels. The CEO has put together a team from various organizational units to explore ways of accomplishing these sometimes contradictory goals.

- The sales and marketing team is looking at new ways to license and distribute the product, including 30- or 90-day trial versions, and a "basic" SKU; additionally, they want the flexibility to decide on the appropriate feature mix for the basic SKU in a time frame that would put it at the end of the development cycle.

- The software development team is looking at the crucial issue of how to best secure the software to prevent further hacking of the license enforcement engine and protect the company's intellectual property.

- The CTO wants an end-to-end solution that integrates with existing tools, at a price that doesn't threaten the budget.

As a Microsoft ISV partner, you have access to the Microsoft Developer Network (MSDN®) Premium subscription, which includes an SLP Online Services Basic subscription. One of your senior developers runs a small pilot program and tests the security of the protected application, and the sales and marketing team investigates how to create the demo and "basic" SKUs. All of the reviews come back positive and recommend further investment, so you decide to move ahead and purchase an "unlimited" Permutation which allows you to protect as much code as needed in this application, and to sign up with the SLP Online Service.

> **The MSDN Premium subscription includes SLP Services Basic.**

Over the next eight months, the development team builds the next version of your "business traveler" package, using SLP Services with the following key results:

- You use SLP Code Protector and a SLP Permutation–which includes your unique version of the Secure Virtual Machine—to lock down your application logic and secure your intellectual property.

- After protecting the code, you use the SLP Licensing Control Portal dynamic licensing to create new licenses for the 30- and 90-day demo versions, the "basic" and the "full" SKUs backed by non-commercial and commercial SLP Activations respectively.

- You deploy an online Web store that customers can use to download the demo and commercial versions of your application, giving them the opportunity to try before they buy and manage the conversion online.

- You increase sales by offering the lower-cost "basic" SKU, and allow customers to upgrade to the full version, also all online.

- Demo versions of the software include statistics gathering through the licensing engine, giving your sales team insight into exactly what features get used and how often. They are already making plans for the next version, and the addition of a mid-level SKU that covers the most commonly used features.
- Six months after release, there is still no pirated version of the new software available online.

By using SLP Services, you've gained positive control of your product, streamlined development, and are now dynamically packaging and selling your product, using exciting new business models. These benefits translate into reduced operating costs, recovered revenues, decreased piracy, and opened new revenue streams.

Benefit from a Trusted Platform

Microsoft SLP Services is a comprehensive and reliable platform bridge between software development and the business of software packaging, distribution, and sales. It combines strong code protection technologies with tools that enable SKU Agility to quickly and easily offer customized feature sets based on specific customer needs. It also enables ISVs to explore new business models that used to require a large investment.

SLP Services lets you take positive control of your product, streamline development, dynamically package your product, and explore new business models. These benefits translate into helping reduce operating costs, recover revenue, decrease piracy, and creating new revenue streams.

By better managing the entire software business lifecycle, you can more effectively protect, package, license, sell, and control the use of your software.

Future releases of SLP Services will enable even easier integration with CRM and ERP systems, reducing operational and sales costs through workflow automation while opening new sales channels. Future versions will also feature tighter integration with the Microsoft Visual Studio® development suite, further easing the burden on development. Get ready for a new and improved software-building experience that helps you bridge the gap between software and software business!

For more information

Please refer to the following resources for more information on the topics covered in this document and for related topics:

Microsoft Software Licensing and Protection Services Web site: www.microsoft.com/slps.

For specific questions, contact us at slpsinfo@microsoft.com.

For more information