

The Key to Larger Market Share

Flexible Licensing and Robust Software Protection

Increasing market share and maximizing profit is challenging for developers when customers are cutting budgets and software piracy is on the rise. One way developers can overcome these challenges is through dynamic licensing coupled with strong application protection. Combining licensing with strong protection opens new market opportunities and prevents software piracy. Providing flexible licensing and simplified license purchasing while maintaining license enforcement and application protection can be a daunting challenge for developers. Fortunately, innovative solutions exist that achieve these license and protection objectives, making it easy for developers to expand their reach to new markets while eliminating piracy and unlicensed application use.

To Protect and Expand: Issues Facing Developers

The Protection Issue

The need to protect applications from illegal use has never been stronger. In a slow-moving economy, revenues lost to piracy are of particular concern for developers. According to the Business Software Alliance (BSA), a respected source for accurate piracy statistics, 40 percent of all business software used globally in the year 2001 was pirated, representing \$10.97 billion (U.S.) in lost revenue worldwide (6/2002). Consider that during the year 2000 alone, Microsoft seized 5 million counterfeit Microsoft products, valued at \$1.7 billion (The Wall Street Journal, April 2001). Protecting applications from software piracy is especially necessary for developers selling to regions such as Europe, Latin America, Asia/Pacific, the Middle East and Africa, where piracy rates range from 26 to 92 percent (BSA, 2002).¹ Piracy is an issue that must be controlled if developers wish to increase profitability.

Beyond piracy, many developers have a difficult time enforcing the overuse of legitimate licenses within the enterprise. For example, a customer may have three licenses for a particular application and be using it in more than three locations. If the developer has no way of adequately tracking licenses, this can result in lost opportunity. It is important for developers not only to license applications but also to monitor license usage for abuse and potential sales opportunities. By tracking licenses, developers can offer upgrades and enforce license terms and conditions.

¹ For more information on the negative effects of piracy, see Rainbow's "Curtailling the Piracy Epidemic" white paper.



The Expansion Issue

In addition to protecting applications from unauthorized use, developers need to examine licensing solutions that can lead to greater market penetration. Enhanced licensing options provide an excellent avenue to expand a product's reach, providing additional revenue streams.

Developers can grow licensing revenue by reaching new, untapped markets and by offering a wider range of licensing options to existing clientele. Licensing options such as pay-per-use and remote licenses open new markets of opportunity. Pay-per-use allows a developer to lease an application on per-use basis and remote licensing enables users outside the network to "check-out" the use of an application. For example, customers who are managing cash flow may be more interested pay-per-use licensing, allowing developers to serve a previously unaddressed market. Additionally, developers need license management capabilities that help shorten sales cycles by offering models such as try-before-you-buy licensing. Moreover, developers should make it easy to purchase licenses (i.e., over the web) to reach even larger audiences.

A Brief History of Licensing Challenges

Prior to the '80s, most software was proprietary to a specific business environment and operated on mainframe systems. There was little value in copying applications. As computers moved from centralized mainframes to client/server models, users began installing software at their individual workstations. This new shift changed the paradigm of software distribution and licensing.

In the '80s, the personal computer explosion created the need for software protection schemes. The '80s also saw the development of a large-scale underground pirate network for illegal software distribution on bulletin board systems. By the '90s, the Internet opened new channels of software delivery and provided an easy-to-use, low-cost method of acquiring software, both legally and illegally. Newer technology such as CD burners also made it easy to duplicate and distribute illegal application copies.

Modern customers are demanding easy-to-license applications that allow licenses to be altered electronically as needed

Today, many software applications are so elaborate, costly and detailed that the majority of users rarely use half of an application's functionality. Secure, dynamic licensing options are needed that enable business customers to buy features of an application as needed. To meet the growing demand for flexible licensing and electronic license distribution, a secure and easy-to-use license management system is needed to encourage software developers to create more licensing options for users and distribute them electronically. In addition, hardware-based security should be combined with license management applications to eliminate unauthorized use.

The Solution: Innovative Licensing and Protection

With the proper licensing and protection solution, piracy can be virtually eliminated. This can be accomplished by securely encrypting and electronically fingerprinting each installed application to an individual user or computer. A licensing solution should require the registration of every installed application, even demonstrations. Registration removes the blanket of anonymity and serves as an additional deterrent to piracy. In a corporate setting, license management is important to enforce compliance to license agreements. Most users

Powerful license and protection solutions allow applications to be widely distributed without concern of piracy

do not need to be sold on the value of using software. Instead, they need to be persuaded to pay for it. Knowing that software is not functional without valid registration encourages users to purchase and register software.

With a strong license management solution, full-featured applications can be distributed on a massive scale with the confidence that users are legally licensed. Whether applications are distributed via CD or downloaded from the Internet, they can be securely encrypted and unlocked in unique “modes.” For example, a CAD application could be designed to unlock a time-sensitive or feature-limited version of the program after a user registers his or her identity with the developer. A developer could enable the full functionality of a program if the user decides to purchase it. Alternatively, the user could purchase the right to lease the application for a fixed time at a reduced cost. Enabling a variety of licensing models lowers the barrier of entry for smaller customers.

For the highest level of anti-piracy protection, applications can be protected with hardware-based security keys. The keys must be present for security key-enabled applications to work. Piracy can be virtually eliminated by making digital copies of applications inoperable without a key. Because each key is unique, secure and nearly impossible to replicate, hardware keys provide an excellent deterrent to piracy. A good hardware security key will include multiple security features as well as multiple license management options, including demo licenses, pay-per-use and feature-based licensing. Additionally, more advanced security keys allow developers to remotely alter a key’s licensing options.

What to Look for in Licensing and Protection Solutions

When seeking application licensing and protection solutions, it is critical to assess a number of variables ranging from licensing flexibility to security strength. Additionally, seek a company that has fully integrated electronic licensing and hardware-based protection for the most robust and tamper-proof solution. It is also important that the company has a successful track record with licensing and protection products and can provide worldwide product support.

When assessing licensing capabilities, developers should look for a solution that:

- **Supports a broad range of licensing models, including:**

Seek a company that fully integrates electronic licensing and hardware protection for the highest level of security and license options

- **Demo Licensing:** A good solution will provide a range of try-before-you-buy options including use counters, time-based (i.e., 30 days) and date-specific expirations so developers can build demo solutions catered to their customers specific environments. Demo applications should be easily converted into fully functional applications electronically. This function allows developers to electronically distribute software on a mass scale and seamlessly convert demo customers into fully licensed users.
- **Remote Licensing:** Remote licensing (also known as commuter licensing) enables remote workers to temporarily checkout a license for an application. This allows customers to withdraw licenses from a pre-purchased pool of application licenses.
- **Web-Based Updates and Purchases:** A licensing management solution should enable developers to distribute licenses and application updates securely over the web as well as easily sell licenses electronically. Web license distribution reduces overhead expenses by eliminating the need to exchange or create new keys. In addition, this allows updates and edits to individual users access rights.

- **Integrates with an application with minimal efforts because of:**

- **Application Shell:** Application shelling protects and prepares applications for licensing models without altering source code, making it easy for developers to offer new licensing options with minimal programming. Applications should be able to be licensed individually or bundled together for a group license.
- **Flexible APIs:** Flexibility is a hallmark of a mature solution. API level programming should be an option for creating customized licensing and protection designs.

When analyzing protection capabilities, developers should look for a solution that:

- **Provides strong security options, including:**

- **System Fingerprinting:** System fingerprinting is the process of locking an application to a hardware component (either a stand alone key or an aspect of the computer system on which it is running) to prevent unlicensed use. An application should be able to lock to any part of a computer system, from the CPU to a monitor. This is ideal for applications distributed electronically and will deter piracy.
- **Hardware Security Keys:** Hardware-based security keys are physical security devices that must be present for an application to operate. Hardware security keys significantly deter piracy and should be able to be coupled with system fingerprinting for even greater levels of security. A powerful security key supports hardware-based data storage for customized algorithms, serial numbers, user names and codes for controlling access. Additionally, a hardware-based ASIC should be present to make brute force hacking less of a concern as hardware is more secure than a password alone.
- **Encrypted Licenses:** Licenses should be encrypted to make them more difficult to copy. The best form of encryption is a proprietary method that remains outside the public domain, making it significantly more difficult to hack.

- **Provides flexible integration options, including:**

- **Multiple Levels of License Authentication:** Licenses should be able to be verified at any time interval ranging from seconds to once a year. This helps reduce the likelihood that a single license is being used to operate multiple applications.
- **Multiple Types of Protection:** Developers should be able to combine hardware keys with software-based protection for further security.

Summary

Flexible licensing and strong application protection are essential for developers seeking to expand their market share. With flexible licensing, applications can be targeted at audiences previously unreachable. Strong application protection will help deter piracy and unauthorized use of flexibly licensed applications. Rainbow's hardware security keys and advanced license management capabilities are the ideal tools developers need to reach new markets and ultimately increase revenues.

Rainbow's Solutions

Rainbow's Sentinel protection and licensing solutions meet all of the previously mentioned requirements and are the world's leading solutions for protecting applications from piracy.

Hardware Keys

For developers seeking a secure hardware license enforcement solution to protect applications from unauthorized use, Rainbow Technologies offers Sentinel™ hardware keys.² Designed to securely protect applications, Sentinel keys are physical devices that offer the strongest form of security for eliminating software piracy.



Using multiple proprietary algorithms, Sentinel SuperPro hardware keys provide the highest level of software protection by integrating seamlessly with an application to assure that only licensed users have the ability to execute the application. In addition, Sentinel SuperPro hardware keys can be used to offer demo versions and implement software licensing options such as feature-based licenses and software-leasing applications.

License Management

Rainbow Technologies Sentinel LM™ is an electronic license management solution that digitally protects applications from unauthorized use.³ Designed to eliminate software piracy, reduce product distribution barriers and provide an extensive array of licensing options, Sentinel LM will open a new world of customers to developers.



With Sentinel LM, software applications can be distributed anywhere in the world without the fear of piracy. Sentinel LM protects software from unauthorized use so it can be posted on the web or burned to CDs for mass distribution. Sentinel LM's powerful system fingerprinting capability assures that only registered users can use an application by locking it to unique characteristics of the computer it is installed on or a hardware security key. In addition, Sentinel LM supports a wide range of license options including evaluation, commuter, feature-based, floating network and pay-per-use, providing a vast array of new revenue possibilities to developers.

² For more information on Sentinel hardware keys, see Rainbow's "Sentinel Product Brief."

³ For more information on Sentinel LM, see Rainbow's "Sentinel LM Product Brief."



www.safenet-inc.com

Corporate: 4690 Millennium Drive, Belcamp, Maryland 21017 USA
Tel: **+1 410.931.7500** or **800.533.3958** eMail: **info@safenet-inc.com**

Australia +61 3 9882 8322
Brazil +55 11 6121 6455
China +86 10 8266 3936
Finland +358 20 500 7800
France +33 1 41 43 29 00
Germany +49 18 03 72 46 26 9
Hong Kong +852 3157 7111

India +91 11 26917538
Japan +81 3 5719 2731
Japan(Tokyo)+81 3 5719 2731
Korea +82 31 705 8212
Mexico +52 55 5575 1441
Netherlands +31 73 658 1900
Singapore (1) +65 6274 2794

Singapore (2) +65 6297 6196
Taiwan +886 2 6630 9388
UK +44 1932 579200
UK (Basingstoke) +44 1256 345900
U.S. (Massachusetts) +1 978.539.4800
U.S. (New Jersey) +1 201.333.3400
U.S. (Virginia) +1 703.279.4500

U.S. (Irvine, California)
+1 949.450.7300
U.S. (Santa Clara, California)
+1 408.855.6000
U.S. (Torrance, California)
+1 310.533.8100

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