CrypKey™

Licensing Software in the Enterprise

The Merits of True Network Licensing

Summary

Unauthorized software use results in staggering profit losses by developers around the globe. While progress is being made in the fight against software piracy, the worldwide personal computer market is growing significantly faster than piracy rates are dropping. In 2006, according to a leading software piracy study[1], this trend resulted in losses of $39 billion US by software developers, which marks a 15% or $5 billion US increase over losses in 2005. The study reports that for every $2 of legitimately-obtained software, $1 worth of software is acquired illegally. The 2006 rate of software piracy worldwide held at 35%, but rose slightly in some countries ranked with the lowest piracy rates, including Canada, Finland, Germany, and the United Arab Emirates.

The need for software copy protection is obvious. There are several companies that offer products for combating illegal and unauthorized software use on standalone computers. A few offer licensing solutions for effectively managing applications in an enterprise. This is known as network licensing-enabled software protection (NLESP).

This whitepaper addresses the differences between standalone application security and true NLESP, and explains why software copy protection solutions with network licensing capabilities are advantageous to both software developers and the enterprise.

Introduction

The enterprise market is a significant revenue source for software vendors. Since it is the largest, demographically-definable market in the world, vendors are keen to make their software products known to this group. However, selling to the enterprise market poses some potential risks. The major challenge is preventing the enterprise from purchasing one software license, copying it, and then distributing it on the network to be used freely by the entire corporation.

This problem is addressed by almost any copy protection and licensing solution. However, most are designed to allow the software to run on only one computer, giving rise to the same result: only one copy is sold to the entire corporation. It is often too much hassle for the corporation to license more than one computer.

But what if the power of the enterprise network could be used to allow a software application to run on as many computers as a corporation needed with just one license? And what if the software could keep track of how many people use it, enabling vendors to appropriately charge enterprises for usage? Software vendors would then be encouraged to make their software more attractive to corporations. Automatic, seamless usage tracking helps vendors increase sales and benefits enterprises by eliminating the requirement to manually manage licenses.

A 2007 study on key trends in software pricing and licensing noted that the top reasons for vendors to switch to more flexible licensing policies, like enterprise network licensing, are to

[1] *Fourth Annual BSA and IDC Global Software Piracy Study,* Business Software Alliance and International Data Group, http://w3.bsa.org/globalstudy//upload/2007-Global-Piracy-Study-EN.pdf

improve customer relations, generate more revenue, and accelerate the sales cycle[2]. This is achieved by supplying features that make software convenient to use in an enterprise environment. The same study cites that the main reasons for enterprises to adopt network licensing solutions are to ensure compliance with vendor agreements and reduce their software costs.

From a software perspective, the main difference between standalone and enterprise customers is that the latter are much more reliant on the network that connects them (i.e., Intranet). The inherent abilities of a network make enterprise software easy and convenient to access, thereby increasing the likelihood that it will be used.

The following sections detail the primary abilities inherent in the enterprise network and how software protection products with network licensing capabilities take advantage of them.

Network Ability #1: License Distribution – One Server, Many Clients

The most obvious ability of the network is that it can distribute virtually any electronic information, including software applications to many computers. The software application is installed on a computer, commonly known as a *server*, and accessed by other computers known as *clients*. While this is beneficial for users, it's a problem for software vendors if controls aren't in place for how many users can access the application.

The typical response to this problem is to copy protect the software so that it will run only on the standalone computer it's licensed for. However, this type of security defeats the abilities of the enterprise network. With this method, there is little protection against the user performing a "sneaker net" transfer of the license to another person's machine or cloning the hard-drive to access the licensed software application. The end result: only one license is sold.

NLESP eliminates this problem. It uses the network to control usage by storing the license on a server and enabling all enterprise computers to access the software. The traditional method of controlling software usage by more than one user in an organization is to distribute "network" or "floating" licenses. These are limited by the number of simultaneous users, commonly referred to as "network seats". The more seats required, the higher the cost to use the software, but still ultimately less expensive than purchasing one license for each standalone computer in the enterprise. And the cost is certainly cheaper than facing licensing abuse charges from software vendors.

Network Ability #2: License Distribution Control

Enterprises are focused on controlling information on their networks. Most have at least one person, if not entire departments, dedicated to designing and enforcing rules pertaining to who can view, copy, and change what information. For software, the same rules apply. Enterprise customers typically like the ability to control software use in one of three different ways:

a) **users** – a person, usually identified by a login password; if a user moves from computer to computer, access must extend to whatever machine the user logs in to
b) **machines** – a computer or server, usually given a unique, identifying name when added to a network
c) **domains** – a group of users, usually more than one, on an enterprise network; typically organized into groups of people with similar information access requirements

[2] *Key Trends in Software Pricing and Licensing (2006-07)*, Software & Information Industry Association (SIIA) http://www.siia.net/software/pubs/SW_Pricing_Licensing_Report.pdf

To be optimally flexible and useful, the enterprise customer must be able to configure who can have access to the software in these terms. The NLESP transmits this information in a request for access, processes the information in parallel to the administrator's configuration for allowed usage, and grants (or refuses) the access request.

Since the usage control is configured by an administrator, the network licensing software requires a utility to simplify this function. This utility instructs administrators as to what users, computers, and domains are available, and then lets them pick which ones are allowed certain access. A useful feature for administrators is to enable them to select users, computers, and domains that are denied access. For example, the administrator specifies access to all but a select few members of a domain, or grants access to all domains except one. This results in configuration that is easier, faster, and more flexible than ever before.

Network Ability #3: License Transport – Now it's Here, Now it's There

When the number of copies of electronic information, such as software, is limited in the enterprise, it's useful to be able to move the licenses from one place on the network to another. When the number of software licenses allowed is controlled by NLESP, enterprise customers appreciate having the ability to move licenses from one computer to another via the network. Although licenses can be used anywhere on an enterprise Intranet, is important to be able to move them for Intranet structure reasons, such as:

- a server with a license is being decommissioned
- a new server is being added and the license is moving on to it
- the server with the license is becoming overloaded and critical processes need to be moved to a different server

It is also important to be able to move licenses for Intranet extension reasons. By this we mean licensing beyond the normal boundaries of the Intranet. An excellent feature of NLESP is that it allows the enterprise user to check out a software copy from a pool of licenses when mobility is required, and then check it back in it at a later time. Some examples of how licenses are used outside the Intranet:

- a company employs contractors who have their own computers and are not usually connected to the Intranet
- employees working from home
- employees traveling abroad

Network Ability #4: Server Redundancy – Just in Case

No matter how new or robust a computer is, it can stop working at any time for a variety of reasons. Since a server contains key information, it's highly disruptive to the organization when that machine goes down. However, as a back up plan, the enterprise will set up a redundant server on the network. This is simply another server that does exactly the same thing as the primary server, except it's only used if the primary server stops working.

For example, almost all enterprise networks have a domain name server (DNS). The function of this computer is to match IP addresses, which are large, cumbersome numbers that the computer uses, with user-friendly names that people use. If the DNS goes down, the whole network becomes inoperable. Likely there is a redundant DNS in place that is ready to step in if the primary one stops working.

Some software is important, even critical, to the day-to-day business of enterprise customers. An important NLESP feature is that it allows redundant license servers. A floating license is installed

on a primary server and another floating license is put on a redundant server. If the primary server goes down, requests for licenses from the client automatically go to the redundant server, thus avoiding disruption in operation.

The concept of having more than one license server can be taken one step further. In large enterprises where multiple servers are in operation at the same time, the client can automatically get a license from the least busy server within seconds. These types of features are attractive to enterprise customers because they maximize use of a key resource that is already in place: the network.

Network Ability #5: Seamless and Invisible Operation – It's All One Big Computer

One of the most important benefits of a network is ease of use for the end user. Since network drives behave much like local drives, they handle all the same functions without requiring a learning curve for users. This means that simple tasks, such as copying or moving files, are performed on a network in the same way they are accomplished on a local drive. The network provides a seamless user experience.

The NLESP solution is also nearly invisible to the end user. The user that is accessing a protected application doesn't need to know where the primary license server or secondary license server is located. The NLESP application finds and verifies the licenses and if authorization is successful, the user simply starts and runs the application anywhere that network access is permitted. It's almost as if the user is working with an unprotected application.

There is a caveat for this feature: automatically locating licenses works well in the local area network (LAN) because messages can be broadcasted to all computers on the system. However, enterprise users also make extensive use of wide area networks (WANs), such as in virtual private network (VPN) applications. In a WAN, message broadcasting is usually not conducted because of potential bandwidth issues. To support network licensing on a WAN, the NLESP application must have a reliable method for the WAN client to locate the license without relying on a broadcast message.

Conclusion

The difference between simple software protection solutions that allow licensed software to run on a standalone computer and a network licensing-enabled software protection (NLESP) application is significant. A software protection system with network licensing uses the inherent abilities of the enterprise network to broaden the market for software vendors. Since the enterprise market makes up a significant portion of total software sales, vendors are wise to consider the important benefits of NLESP when choosing a protection solution. From the enterprise perspective, NLESP benefits the organization by offering better and more flexible control of its software license management.

CrypKey (Canada) Inc. offers the NLSEP abilities discussed in this whitepaper as standard features in both the CrypKey SDK and CrypKey Instant software protection systems.

Resources and Information

Since 1992, CrypKey (Canada) Inc. has been a leading developer of reliable, world-class software protection and license management solutions for small, medium, and large enterprises. CrypKey was one of the first companies to focus its entire business on building proven, robust software copy protection solutions. Backed by exemplary technical service and support, CrypKey

is also one of the few companies that offers true network licensing solutions.

For more information, contact CrypKey at 1-403-258-6274 or visit www.CrypKey.com.