Software security: site licensing, 'boxtops,' and other strategies

As the issue of software piracy gains recognition, program manufacturers are trying different ways to protect their software from illegal copying.

Some companies are trying site-licensing agreements, which permit users to freely make copies for use at the licensed site.

Others are letting users copy software as demo disks for friends; if the friend buys the program, the user gets a percentage of the sale.

Some firms have stopped trying to protect their software. And lawmakers are increasingly considering antipiracy laws.

Site licensing. AGS Management Systems recently announced site licensing agreements for its PAC Micro project management system. The agreements give organizations the right to make and distribute unlimited copies for use by their employees.

“Site licenses for mainframe software have been available for years,” said Joseph Roberts, CEO of the King of Prussia, Pennsylvania, software firm. “It’s about time we apply some of the same benefits to micro software as well.”

To get such a license, an organization must pay a one-time fee of $25,000. In return, the company gets 25 unprotected copies of the software and the documentation. Additional documentation may be purchased. Software upgrades will also be offered for additional one-time fees.

ZyLAB Corp. recently standardized its site-licensing terms for its ZyIndex retrieval software. The Chicago, Illinois-based firm’s site-licensing terms require a minimum order of 200 copies of the software. Disk copies of the documentation are included so users can modify the manual for their particular needs.

An optional annual fee for user support, upgrades, and related products is based on a percentage of the site-licensing fee. The services covered by the optional fee are free for the first year.

Softra, Inc., of San Diego, California, is offering a management system for such site-licensing agreements through its Softra System package. The package allows software programs to be produced on demand within most computer systems.

Its built-in memory tracks the number of programs purchased, who produced the programs, and when the production occurred. During nonworking hours, the package polls each terminal for the production information and relays it to the appropriate software producer.

The Softra terminals can be programmed to produce a specific number of programs and to replicate the exact protection scheme used by the manufacturer.

Any customer who does not accept the terms must return the package within five days.

“Boxtop” warnings. Real-time software manufacturer Hunter & Ready is taking a different tack. Following the lead of retail PC software outlets, Hunter & Ready will deliver its VRTX operating system kernel R&D documentation, source-code material, and product labels to customers with a conspicuous “boxtop” warning.

The notice tells the customer that “opening this package indicates you have read and accept the terms and conditions set forth.” Any customer who does not accept the terms must return the unopened package within five business days of receipt.

Customers will have to burn the software into programmable read-only memory and then affix a Hunter & Ready copyright label to each PROM copy.

Software firms must protect their products, said Colin Hunter, president of Palo Alto, California, firm. “On the other hand, shepherding licenses through customer legal departments can add months to the selling cycle. . . . The personal computer software industry has provided us with a simple model that is effective and fair to the customer.”

Legislation. The boxtop license was conceived by the Palo Alto law firm Fenwick, Davis, and West. The firm designed the first boxtop warning for VisiCorp’s PC products. Legislation is now before California’s Legislature to make such boxtop license agreements enforceable under the state’s civil code.

Illinois is considering similar legislation. The proposed law, passed by a General Assembly subcommittee, does not require a boxtop label. By simply breaking the seal or clear wrapping around the software packaging, a user has agreed to certain terms in the license agreement within.

The law would implement the following stipulations:
- giving the purchaser a license to use the software, not permanent ownership of it;
- prohibition against copying the software, limits on the reasons to make copies, and limits on the numbers of copies that may be made;
- limits on allowable user modifications;
- prohibitions against further transfer, sale, or rental;
- limits on the use of the software in more than one location or by more than one user; and
- provisions for termination on the licensing agreement without notice.

Currently, a software publisher in Illinois must sue flagrant misusers of their software on a case-by-case basis.

Users as allies. Statmark, Inc., of Tempe, Arizona, introduced its Softway plan to combat piracy by converting users into marketing allies. Statmark executives feel the piracy problem is caused by the ease of disk duplication and the natural tendency for a user to pass copies of programs onto friends and associates.

The Softway plan authorizes users to copy and distribute special limited-use, salable evaluation copies to prospective
buyers. The user gets a commission for each copy purchased. Those who buy the evaluation disks are given an unlock code to make the program fully usable.

The plan works in a pyramid fashion. A user may sell three copies of a program to friends, earning a 20 percent commission on each sale. One friend in turn sells the program to six associates. The original user gets a 10 percent commission on those sales, while the friend gets a 20 percent commission on each sale. There are two further levels, one which pays a five percent commission, the other a two percent commission.

A monitor on the disk keeps track of the levels and moves the new purchaser's name to the top when he buys the program and gets the unlock code. Statmark hopes this approach will discourage pirating by making it unprofitable.

Protection dropped. Two firms recently announced they were dropping copy protection schemes on their software. Forethought, Inc., publisher of the Macware software for Apple's Macintosh PCs, stopped protecting its business software in May.

"Customers should not be inconvenienced with the restrictions inherent in even the best conceived copy protection plan," said Bob Campbell, the president of the Mountain View, California, company. "Dropping the technical measures we took to restrict illegal copying makes it easier for our customers to use or products in new environments and allows them to make backup copies as needed."

Forethought had used a scheme where copying was allowed, but copies were made into limited-use demonstration versions. Customers who sent in registration cards were given a free full-function backup version.

Dealers will still be given demonstration copies so prospective buyers can "test drive" the software without being able to copy it illegally.

Users who bought Macware programs before the new policy was instituted can buy the unprotected software for a nominal fee.

Earlier, the Software Group, publisher of the Enable integrated software package, removed its copy protection schemes. Purchasers can get the unprotected software by signing an agreement not to violate the company's copyright.

Requestors must also subscribe to Enable's update program at an annual fee of $95. The program includes annual upgrades, documentation, and a newsletter.

Computer Society publications recently began copy editing articles on-line. This issue of IEEE Software is the first society magazine to edit all articles electronically. Following that lead, IEEE Software's sister magazine, IEEE Design & Test, is editing most of its August issue on computer. One of its authors sent not only an electronic version of his manuscript, but also a computer-generated image of himself. The image has become his trademark, Wayne H. Wolf of AT&T Bell Laboratories explained, and even appears on all electronic mail messages he sends to his colleagues.

IEEE Software begins on-line editing, typesetting
Galen Gruman, Assistant Editor

This issue of IEEE Software marks the first Computer Society magazine to be copy edited and typeset with the society's new electronic editing system. Articles were received over phone lines and edited on the society's IBM PCs. The edited files were run through an in-house program to convert them to coded, typesettable ASCII files.

Since IEEE Software began publication in January 1984, an average of two articles per issue have gone through the review and technical editing process completely electronically, with files transferred through electronic mail services. Four of this issue's articles were reviewed on-line.

Several article referees have done their work exclusively on-line. Editor-in-Chief Bruce Shriver routinely sends "soft" copies of all the forms sent to authors and reviewer's through electronic mail services.

The society began computerizing its copy editing process a year ago. IEEE Micro has received and edited some of its articles since April 1984 using a Zenith Z-100 PC. IEEE Design & Test and IEEE Software began writing departmental copy on IBM PC XT's when the computers were installed this winter. IEEE Computer Graphics and Applications and Computer started using the PCs shortly thereafter.

Each workstation was loaded with Microsoft Word's word processing program and Hayes' Smartcom II telecommunications software. Work on the typesetting conversion program, related utilities, and a set of typesetting codes common to all five magazines began in earnest.

IEEE Software editors contacted the authors for the July issue and asked if they had electronic versions of their manuscripts. All did, and all agreed to be edited electronically.

Most articles were retrieved by editors who dialed in to the authors' mainframes. The editors used their PCs as remote terminals and accessed the authors' ASCII files from special accounts or directories set up for them by the authors. This proved to be one of the fastest methods of receiving and sending files.

The special section on international parallel processing efforts was sent through electronic mail, the other quick transmission method. Guest Editor Joanne L. Martin transmitted the section from a Bitnet account via a gateway to the editors' electronic mailbox on the Computer Society's Compmail+ network. Through various gateways, authors can send articles to Compmail+ from Educom, Bitnet, CSnet, ARPANet, and UUCP.

Authors can also send ASCII, WordStar, or Microsoft Word files on IBM DOS-compatible disks or ASCII.

Because most files received had been run through a text editor program by the authors to make the printouts originally submitted to the magazine, editors had to strip out extra spaces, hyphenation, and page format codes. Codes for bold, italic, superscripted, and subscripted text were replaced with the society magazines' codes.

Editors included comments to the authors and notes indicating major revisions in the edited files sent back electronically to the authors. Authors added their corrections and alterations to these revised files and sent them back to IEEE Software's editors.

These final files were run through an in-house typesetting conversion program that stripped out the comments.

The system also improved turnaround time. In one case, an edited manuscript downloaded into an author's mainframe in the morning was ready to be uploaded back to the editor with the author's changes that afternoon.
**Subcommittee seeks federal supercomputer funds**

While today's supercomputers are capable of a billion floating point operations per second, they are achieving only a fifth of that capability. One reason for this computational underuse is the lack of appropriate supercomputing software, said Sidney Fernbach, chairman of the IEEE Scientific Supercomputer Subcommittee.

Fernbach spoke June 14 to the National Science Foundation supercomputing advisory board to seek federal funds to help establish a supercomputing research laboratory. The NSF has been investigating what needs to be done and what its role might be in any supercomputing endeavor.

He also spoke to Department of Energy officials and to the Federal Coordinating Council on Science, Engineering, and Technology, which is headed by George Keyworth, President Reagan's science advisor.

The efforts to create a supercomputing institute have gotten a good reception from government officials, Fernbach said, but they have not yet received any funding.

The IEEE subcommittee is focusing on supercomputer software because "there is little known on how to effectively program these machines," Fernbach said. "The [current] software is lousy. There's got to be more effort here." Work needs to be done on hardware aspects of supercomputing, Fernbach acknowledged, but not as urgently as the software research.

A 1983 IEEE report urged federal guaranteed buys of supercomputers and funding for additional research. Fernbach echoed the report's recommendations, arguing that the federal government must provide the money so that financially pinched universities can carry out supercomputing research.

**Japanese computer development projects outlined**

_Edmund Gallizzi, Ecker College_

Japan's Fifth Generation Project is the most ambitious and perhaps the most important undertaking since the Japanese government embarked on its National Projects in 1966, according to Hideo Aiso of Keio University in Yokohama, Japan.

Aiso described the major Japanese information technology projects at the 18th Annual Hawaii International Conference on System Science in January. The National Projects are funded by Japan's Ministry of International Trade and Industry. The Japanese government considers information to be a resource that is fast becoming as valuable as traditional natural resources such as oil, he said.

The Fifth Generation Project can be ideally viewed as a knowledge information processing system that includes voice recognition, speech understanding, an image-based interactive mode in addition to the usual user interfaces, sophisticated inference functions, and transparent functional distributed processing, he said. Typical applications include multilingual translation, expert systems, voice applications, image processing, and VLSI CAD.

The first of the project's three phases is ending this fiscal year. A MITI advisory committee has concluded that most of the first phase's goals have been met. The committee recently approved more than 90 percent of the research and development budget for the next fiscal year.

The reviews at the end of each phase allow MITI to revise the next phases' plans appropriately, based on the project's achievements to that time. Some of the revised goals might require Sixth and Seventh Generation Projects, Aiso said.

In addition to the National Projects, MITI is also supervising subsidy projects undertaken by industry. The costs of the subsidy programs are usually split evenly between the government and participating companies, Aiso explained.

Under the program, contractors must refund some of the project's costs if a profitable product results.

While the Fifth Generation Project has generated most of the West's attention recently, MITI began its computer efforts in 1966 with the Very High-Performance Computer System Project. That five-year effort was aimed at developing a system that performed as well as an IBM 370/168 with a multiprocessor architecture.

Other completed projects are the Pattern Information Processing System Project, the VLSI Project, and the Next Generation Computer System (Fourth Generation) Project.

Four other endeavors are now under way: the Very High-Speed Scientific Computing Systems (Supercomputers) Project, the Robotics for Work in Extreme Conditions Project, and the Industrialization Technology for Software Development Project.

**Hackers help data protection market grow**

Hackers use other people's computers. Pirates copy software illegally. Phreaks use long distance phone lines without paying. These serious high technology vandals increasingly are forcing computer users to protect their data, according to a business research report. Natural disasters and accidents, such as power outages and disk crashes, also require information protection solutions.

That could mean more than $1.5 billion (in constant dollars) to information protection vendors by 1989, double the current market, predicts a Frost & Sullivan survey.

Computer security will account for nearly 95 percent of the information security revenue. The market for standalone communications security devices will fall as branch exchanges continue to incorporate data communications, but the market for point-to-point voice communications security should remain constant, the report said.

The minicomputer market is expected to be the fastest growing segment, tripling in revenues from $67 million now to $238 million in 1989.

One reason for the anticipated high growth is that security is now a low priority for most companies. "Many of the end-user companies we spoke to were still dealing with the issues of how many personal computers were present in their organizations and what was the best use for them," the report said. Only once the computer's role was defined did the companies expect to give security a high priority.

**Northeastern names Technology Center chief**

Boston's Northeastern University has appointed Allen L. Jefferis to direct its Bay Area Technology Center in Santa Clara, California. Jefferis was worldwide customer training manager at Intel before joining the center.

He has also worked for National Semiconductor, Hewlett-Packard, and Lockheed Missile and Space Company in various positions.

The center, opened this spring in the Silicon Valley, offers courses to keep technical professionals abreast of changes in their fields. Courses are given at the Santa Clara headquarters and at satellite sites in Cupertino, Palo Alto, Mountain View, Milpitas, and San Jose. It is modeled after a similar center that has been operating in Massachusetts' Route 126 high-technology area since 1963.

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Parallel processing conference preview

Pennsylvania State University and the IEEE Computer Society, in cooperation with ACM, are sponsoring the International Conference on Parallel Processing August 20-23. The conference is being held in the Chicago suburb of St. Charles, Illinois.

In addition to its 12 sessions, the conference features three preconference tutorials and three postconference tutorials.

Preconference tutorials. Chuan-lin Wu of the University of Texas at Austin will teach "Parallel Processing and Interconnection Networks," which is aimed at researchers interested in exploring fundamental principles of parallel architecture and processing. It focuses on two issues: the interconnection of processors and the match between algorithms and architecture.

"Logic Programming and Parallel Processing," taught by Doug DeGroot of IBM's T.J. Watson Research Center, discusses methods of parallelizing logic programs and such programs' two components: interface control and problem specification. Participants need no experience in the Prolog language.

Daniel P. Siewiorek's tutorial, "Fault Tolerance in Multiprocessor Systems," covers a broad range of topics, from fundamental concepts to practical systems. The intended audience is twofold: computer system designers and users.

Postconference tutorials. "Supercomputers: Design and Applications," taught by Kai Hwang of the University of Southern California, uses the tutorial text Supercomputers: Design and Applications (1984) and slide presentations to discuss system architectures, technology bases, vector/array processing, language extensions, exploratory research prototypes, and multiprocessor supports.

Ehud Shapiro of the Weizmann Institute of Science will teach "Concurrent Logic Programming Techniques," a tutorial intended to demonstrate concepts of concurrent programming techniques unique to logic programming that emphasize ease of expression and allow parallel execution.


Session topics. The conference's 34 presentations are divided into 12 sessions. The topics covered include parallel algorithms, problem mapping, systemic systems, operating system problems, languages for parallel processing, data flow, memory management, interconnection networks, mesh-structured systems, sorting, and fault tolerance.

For additional information on the conference's technical content, contact Doug DeGroot, MS 21-133, T.J. Watson Research Center, PO Box 218, IBM Corp., Yorktown Heights, NY 10598; (914) 945-3497.

Registration. The conference charge is $130 for IEEE and ACM members and $160 for nonmembers. Each tutorial costs $130 for IEEE and ACM members and $160 for nonmembers. The registration deadline is Aug. 5. For details on registration, accommodations, and transportation, contact Pheasant Run Resort, PO Box 64, St. Charles, IL 60174; (312) 584-6300.

Insurance industry computer use expected to rise

Two primary segments of the insurance industry—the life and health portion and the property and casualty portion—will use more computer software and services in the next five years, driven by home offices of larger firms seeking to expand the capabilities of their existing equipment, predicts Frost & Sullivan, a business research firm.

The total market is expected to rise from $128 million in 1984 to $199 million in 1988 (in constant 1984 dollars), the firm said.

However, the market for mainframe policy administration systems in the life and health segment of the industry will grow slowly. "The new client-based systems will be sold to the very top end of the market, but the ultimate cost of these systems and the hardware they require will result in fewer installations," the report said.

Although the acquisitions of such systems has already passed its zenith, the report said, the high prices of these systems have already passed 24 percent of total expenditures. The figure is nearly double 1984's spending of $48.4 million, but most of the increase is due to the prices of the available systems and not to increased orders.

The property and casualty segment will continue automation as more companies can justify the costs of new hardware and software. The market value is predicted to be $62.4 million in 1988, up from $47.2 million in 1984.

Frost & Sullivan predicted that new sales for major systems will be concentrated in the client-based systems, which tie all the separate accounts of an individual, for the larger companies.

Smaller companies will use smaller, cheaper computers. Mid-sized firms are expected to maintain or upgrade their existing equipment.

NBS software guide

The National Bureau of Standards has published a guide to off-the-shelf business software for the entire range of computers, from micros to mainframes. The guide reviews the kinds of business tasks for which software is available, lists industry journals and magazines and defines their areas of concentration, and points out useful techniques to save time in locating expert advice.

The guide (stock number 003-003-02569-1) is available for $2.25 from Dept. 36-HM, Superintendent of Documents, Washington, DC 20402.

Singapore to use ICCP certification

The National Computer Board of Singapore began conducting computer certification examinations in May using the Certificate in Data Processing and Certificate in Computer Programming exams developed by the US-based Institute for Certification of Computer Professionals.

Beginning with the 1986 exams in both the US and Singapore, there will be a recertification requirement every three years.