

NETWORK SOFTWARE PROTECTS AGAINST CYBERTHREAT

Information security is an increasingly important issue for both private companies and the Federal Government. Information thieves are hacking into more company networks, stealing, modifying, or destroying confidential data. Some, interested only in causing chaos, shut down or crash entire computer systems and networks, costing companies thousands of dollars to assess and repair the damages. Also, Internet access allows an increased number of attacks on the U.S. military; it has been estimated that as many as 250,000 hacker attacks occur on the U.S. Department of Defense each year.¹

In an important step toward helping nondefense companies protect their computerized assets, Gemini Computers, Inc. (Carmel, CA), adapted its BMDO-funded information security technology to an electronic bank loan pilot project at the Small Business Administration (SBA) Service Center in Fresno, California. BMDO's Science and Technology office and the SBA jointly sponsored this defense conversion.

Gemini's software, based on a network-level product, features integrated encryption and Department of Defense certification at its highest security level. In the SBA pilot project, this technology protects sensitive information for electronic bank loan operations among three SBA offices: SBA Headquarters in Washington, D.C.; the SBA Operation Finance Center in Denver, Colorado; and the SBA District Office and Service Center in Fresno, California.

The Gemini trusted network processor (GTNP) provides high-level security that helps protect information from such outside threats as computer hackers. It also controls damage from often-overlooked internal threats, such as hostile insiders and computer viruses. Providing companies with this security requires affordable products that minimally affect the performance of the existing network.

Bringing the mandatory security controls of the military to commercial systems, Gemini could contribute to emerging markets such as secure electronic commerce, health care information systems, teleconferencing, and protection of industrial trade secrets. Increased security not only prevents companies from losing valuable information to competitors, but for such areas as electronic commerce and health care information systems, it increases the trust of customers.

ABOUT THE TECHNOLOGY

The GTNP provides multilevel security, encryption, and concurrent processing. Gemini designed the GTNP to support integration with other technologies and products in order to build a variety of secure network interconnections and secure data-sharing components for multilevel, secure distributed information systems. GTNP's open architecture does not restrict its use to a single application or suite of protocols. Instead, applications and protocols can be developed to run on top of the GTNP-structured computing base to support the specific network requirements. The Gemini Multiprocessing Secure Operating System Security Kernel runs the GTNP. This software implements real-time, priority-based scheduling to provide multiprogramming and multiprocessing to support concurrent computing, including parallel and pipeline processing.

. . . software that can protect a company's computer networks against hackers and hostile insiders.

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■ Pictured above is a defense installation whose networks can be secured against cyberthreats using Gemini's technology. Nondefense networks can also be protected.

¹United States Government Accounting Office. 1996. Information security: Computer attacks at Department of Defense pose increasing risks. No. GAO/AIMD-96-84, 22 May. GAO Reports and Testimony: May 1996. Washington, DC.