

Stony Brook News

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For Immediate Release

NSF Funds Trusted Computing Project at Stony Brook University

Computer Science professor Erez Zadok receives \$400,000 to investigate a layered approach to securing network file systems.

STONY BROOK, NY -July 9, 2003. The NSF has awarded \$400,000 to Stony Brook professor Erez Zadok to fund a computer science project in which he will investigate a layered approach to securing network file systems. File systems protect important data, but existing file systems are not secure enough for today's needs. Worse, file system development is difficult. This project investigates and develops an infrastructure for easy development of highly-secure and efficient file systems, using an incremental, layered approach, with a focus on network-based file systems. The main technique used is called "stacking": a method for one file system to pass through the operations and data to one or more other file systems. With stacking it is possible to intercept file system operations and then control them as needed. Examples of file systems that are being developed include strong transparent encryption, transparent check summing for integrity, versioning for recovery, transparent virus detection, load-balancing and replication for addressing Denial-of-Service attacks, sand-boxing for intruder monitoring, hooks for Intrusion Detection Systems (IDSs), and more. The project further investigates placement of such layered file systems in on file servers, clients, or in-between proxies. The long-term significance of this work is that it creates Operating Systems infrastructure that will allow future developers to build highly-secure and efficient file systems easily, as well as provide several practical working file system examples. Through this research and teaching, a new era of secure file system development is ushered.

This important research program comes at a critical time for Stony Brook's newly unveiled Center of Excellence in the Wireless Internet and Information Technology proclaimed by Governor Pataki on August 2, 2002 at a special press conference at Stony Brook University. The industry-driven Center represents a total investment of \$230M from state, federal and private sources and is expected to create thousands of high tech jobs throughout New York State.