
Homework 4

Due Date: June 14, 2000, at 6PM

Points: 150

1. (50 points) Consider the intrusion detection system model, which consists of sensor mechanisms, analysis engines, and notification engines. Please generalize this model to cover other system auditing mechanisms.
2. (40 points) The program *lsu* is a version of *su* that uses an access control file and the user's password to give access to shared accounts. It runs *setuid* to *root* on UNIX systems. On the web page is a tarball of the program *lsu.tar*. Download it and find at least 2 potential security vulnerabilities. You do **not** need to exploit them, but you must say how you could exploit them.
3. (60 points) The library *mssystem* provides a version of the *system(3)* library function that purports to provide better security when invoked by a privileged (*setuid* or *setgid*) program. On the web page is a tarball of the library. Please evaluate it against the eight principles of secure design and state which ones it exemplifies, if any. Can you find any security flaws?