

Problem Set 25

CS 411

Due at the beginning of class on the first class day of the following week.
Sections 11.4–6

1. Consider a system that supports 5,000 users. Suppose that you want to allow 4,990 of these users to be able to access one file. The remaining 10 users should *not* be able to access the file.
 - (a) How would you specify this protection scheme in Linux using the traditional Owner/Group/World permissions?
 - (b) How would you specify this protection scheme in Linux using Access Control List permissions? (Hint: Enter the following into a search engine — `redhat linux acl`.)
2. Linux systems typically use the Network File System (NFS) for remote file sharing.
 - (a) For security reasons, NFS servers typically map NFS client requests from the root user to some other user. This is known as *root squashing*. What vulnerability is opened by disabling root squashing?
 - (b) Root squashing is typically disabled for diskless NFS clients. Why? What measures can be taken to attempt to mitigate the security vulnerability created by disabling root squashing, and how effective would those measures be?