

Lecture 11 Outline

Reading: *text*, §2; 3.1–3.2; 4; [19]

Assignments due: Homework #2, due April 27, 2011 at 11:55pm

Discussion Problem. The UNIX operating system (and most computer systems) have an all-powerful user. Common names for this user are *root*, *wheel*, or *Administrator*.

- a. Why does such a user exist?
 - b. Dennis Ritchie called the existence of this user “both a theoretical and practical flaw.” Why?
1. Access Control Matrix
 - a. Commands and conditions: create-file, various flavors of grant-right to show conditions and nested commands
 - b. Copy flag
 - c. Attenuation of privileges
 2. HRU Result
 - a. Notion of leakage in terms of ACM
 - b. Determining security of a generic system with generic rights and mono-operational commands is decidable
 - c. Determining security of a generic system with generic rights is undecidable
 - d. Meaning: can’t derive a generic algorithm; must look at (sets of) individual case