CS 591: Introduction to Computer Security

Lecture 5: Integrity Models

James Hook
Objectives

- Integrity models in context
- Introduce integrity models
- Begin hybrid models
Last Lecture

- Bell LaPadula Confidentiality
- Lattice of security levels
  - No read up
  - No write down
- DG/UX realization of Bell LaPadula
Integrity

- Extrinsic: A system has integrity if it is trusted
- Integrity is not just a property of the information system
- A perfect information system could lose integrity in a corrupt organization
Integrity Principles

• Separation of Duty:
  – If two or more steps are required to perform a critical function, at least two different people should perform the steps
Integrity Principles

• Separation of Duty
• Separation of Function
  – Develops do not develop new programs on productions systems
Integrity Principles

• Separation of Duty
• Separation of Function
• Auditing
  – Record what actions took place and who performed them
  – Contributes to both recovery and accountability
Presentation

• Bishop Chapter 6 slides
• Bishop Chapter 7 slides
Exercises

• Due
  – Monday 17 October beginning of class
  – I prefer paper submissions, but you may submit electronically by email to hook@cs.pdx.edu. Please include “InfoSec Exercises” in the subject

• From Bishop:
  1. 6.6.1
  2. 6.6.3
  3. 6.6.5
  4. 7.7.2
  5. 7.7.6
Looking Forward

- Today: 6 & 7
- Wednesday: 15 (Information flow)
- Monday (10/17): 17 (Assurance)
- Wednesday (10/19): 8 (Basic Crypto; Binkley)
- Monday, Wednesday (10/24,26): 9 and 10 (More crypto; midterm review)
- Monday 10/31 Midterm