

CS 591: Introduction to Computer Security

Lecture 5: Integrity Models

James Hook

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Objectives

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

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Last Lecture

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

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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

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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

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Integrity Principles

- Separation of Duty
- Separation of Function
 - Developers do not develop new programs on production systems

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Integrity Principles

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

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Presentation

- Bishop Chapter 6 [slides](#)
- Bishop Chapter 7 [slides](#)

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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

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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

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