

Chapter 2 (cont):
COMPUTER NETWORK VULNERABILITIES

- Definition
- Sources of Vulnerabilities
- Vulnerabilities Assessment

Definition

- What is system vulnerabilities?
 - System vulnerabilities are weaknesses in the software or hardware on a server or a client that can be exploited by a determined intruder to gain access to or shut down a network.



Definition

- What is system vulnerabilities?
 - **Donald Pipkin:** system vulnerability as a condition, a weakness of or an absence of security procedure, or technical, physical, or other controls that could be exploited by a threat.
 - Vulnerabilities exist in: software, hardware, policies, users and employees of the computer network systems.

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Sources of Vulnerabilities

- Design Flaws
- Poor Security Management
- Internet Technology Vulnerability
- Changing Nature of Hacker Technologies and Activities
- Difficulty of Fixing Vulnerable Systems
- Social Engineering

Design Flaws

- Hardware design flaws
- Software design flaws: three major factors
 - human factors
 - software complexity
 - trustworthy software sources

Design Flaws

- Hardware design flaws
- Software design flaws: three major factors
 - human factors:
 - Memory lapses and attentional failures
 - Rush to finish
 - Overconfidence and use of nonstandard or untested algorithms
 - Malice
 - Complacency

Design Flaws

- Hardware design flaws
- Software design flaws: three major factors
 - software complexity
 - Complexity
 - Difficult testing
 - Ease of programming

Design Flaws

- Hardware design flaws
- Software design flaws: three major factors
 - trustworthy software sources

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Vulnerability Assessment

- Vulnerability assessment is a process that works on a system to identify, track, and manage the repair of vulnerabilities on the system.
- Vulnerability Assessment Services
- Advantages of Vulnerability Assessment Services