

Computer Security Fundamentals and Applications

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Abstract

Computing security has long been of interest to the military, the federal government and the banking industry. During the past 5 years, with the proliferation of the Internet and WEB, even the casual user of today's technology is required to have an understanding of security fundamentals in order to protect themselves. The popular press continually reports the exploits of hackers, the destruction caused by viruses, and white-collar crime involving security breaches. As educators we have the responsibility to be knowledgeable ourselves, as well as to view security not as a specialized topic, but rather as a body of information that should be integrated into our curricula. Students need to develop a healthy respect of security issues and be prepared to use, design and implement secure systems, as well as develop new techniques to address security issues of the future. This workshop includes coverage of three major topics: (1) fundamentals of security, (2) applications, and (3) teaching computing security to our students. After attending this workshop the attendee should be familiar with basic security concepts and terminology and be able to integrate security education into information systems curricula.

The target audience for this workshop is the information systems community, especially those that teach computer networks, systems/network administration, management of computing technology, and systems analysis/development. The material presented in this workshop will be at the conceptual level with minimal mathematical background required of the attendee.

Fundamentals

- Introduction
- Conventional Encryption
- Public Key Cryptography

Applications

- Authentication
- Electronic Mail
- IP Security
- WEB Security
- Intruders and Viruses
- Firewalls

Pedagogy

- Curriculum
- Resources
- Laboratory exercises