1. Record Nr. UNINA9910154943503321 Autore Stallings William Titolo Cryptography and network security: principles and practice / / William Stallings Boston:,: Pearson,, [2017] Pubbl/distr/stampa ©2017 **ISBN** 9781292158594 9781292158587 Edizione [Seventh, global edition.] Descrizione fisica 1 online resource (766 pages): illustrations; Collana Always learning Disciplina 005.82 Soggetti Data encryption (Computer science) Computer security Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di bibliografia Includes bibliographical references and index. Cover -- Notation -- Preface -- Contents -- About the Author -- Part Nota di contenuto One: Background -- Chapter 1 Computer and Network Security Concepts -- 1.1 Computer Security Concepts -- 1.2 The OSI Security Architecture -- 1.3 Security Attacks -- 1.4 Security Services -- 1.5 Security Mechanisms -- 1.6 Fundamental Security Design Principles --1.7 Attack Surfaces and Attack Trees -- 1.8 A Model for Network Security -- 1.9 Standards -- 1.10 Key Terms, Review Questions, and Problems -- Chapter 2 Introduction to Number Theory -- 2.1 Divisibility and the Division Algorithm -- 2.2 The Euclidean Algorithm -- 2.3 Modular Arithmetic -- 2.4 Prime Numbers -- 2.5 Fermat's and Euler's Theorems -- 2.6 Testing for Primality -- 2.7 The Chinese Remainder Theorem -- 2.8 Discrete Logarithms -- 2.9 Key Terms. Review Questions, and Problems -- Appendix 2A The Meaning of Mod -- Part Two: Symmetric Ciphers -- Chapter 3 Classical Encryption Techniques -- 3.1 Symmetric Cipher Model -- 3.2 Substitution Techniques -- 3.3 Transposition Techniques -- 3.4 Rotor Machines --3.5 Steganography -- 3.6 Key Terms, Review Questions, and Problems -- Chapter 4 Block Ciphers and the Data Encryption Standard -- 4.1 Traditional Block Cipher Structure -- 4.2 The Data Encryption Standard

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Sommario/riassunto

For courses in Cryptography, Computer Security, and Network Security The Principles and Practice of Cryptography and Network Security Stallings' Cryptography and Network Security introduces students to the compelling and evolving field of cryptography and network security. In an age of viruses and hackers, electronic eavesdropping, and electronic fraud on a global scale, security is paramount. The purpose of this book is to provide a practical survey of both the principles and practice of cryptography and network security. In the first part of the book, the basic issues to be addressed by a network security capability are explored by providing a tutorial and survey of cryptography and network security technology. The latter part of the book deals with the practice of network security: practical applications that have been implemented and are in use to provide network security. This edition streamlines subject matter with new and updated material -- including Sage, one of the most important features of the book. Sage is an opensource, multiplatform, freeware package that implements a very powerful, flexible, and easily learned mathematics and computer algebra system. It provides hands-on experience with cryptographic algorithms and supporting homework assignments. With Sage, students learn a powerful tool that can be used for virtually any mathematical application. The book also provides an unparalleled degree of support

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