DESCRIPTION

Written by an expert with over 15 years’ experience in the field, this book establishes the foundations of Cloud computing, building an in-depth and diverse understanding of the technologies behind Cloud computing.

In this book, the author begins with an introduction to Cloud computing, presenting fundamental concepts such as analyzing Cloud definitions, Cloud evolution, Cloud services, Cloud deployment types and highlighting the main challenges. Following on from the introduction, the book is divided into three parts: Cloud management, Cloud security, and practical examples.

Part one presents the main components constituting the Cloud and federated Cloud infrastructure (e.g., interactions and deployment), discusses management platforms (resources and services), identifies and analyzes the main properties of the Cloud infrastructure, and presents Cloud automated management services: virtual and application resource management services. Part two analyzes the problem of establishing trustworthy Cloud, discusses foundation frameworks for addressing this problem – focusing on mechanisms for treating the security challenges, discusses foundation frameworks and mechanisms for remote attestation in Cloud and establishing Cloud trust anchors, and lastly provides a framework for establishing a trustworthy provenance system and describes its importance in addressing major security challenges such as forensic investigation, mitigating insider threats and operation management assurance. Finally, part three, based on practical examples, presents real-life commercial and open
source examples of some of the concepts discussed, and includes a real-life case study to reinforce learning – especially focusing on Cloud security.

Key Features

• Covers in detail two main aspects of Cloud computing: Cloud management and Cloud security

• Presents a high-level view (i.e., architecture framework) for Clouds and federated Clouds which is useful for professionals, decision makers, and students

• Includes illustrations and real-life deployment scenarios to bridge the gap between theory and practice

• Extracts, defines, and analyzes the desired properties and management services of Cloud computing and its associated challenges and disadvantages

• Analyzes the risks associated with Cloud services and deployment types and what could be done to address the risk for establishing trustworthy Cloud computing

• Provides a research roadmap to establish next-generation trustworthy Cloud computing

• Includes exercises and solutions to problems as well as PowerPoint slides for instructors

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-topic ABOUT THE AUTHOR

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