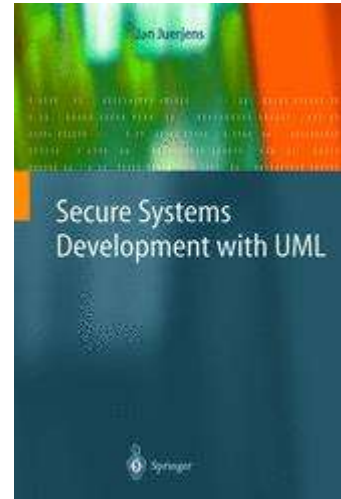


Jan Jürjens

Secure Systems Development with UML

Approx. 280 pp., Hardcover, EUR 49.95/USD 49.95
Springer-Verlag, 10/2004, ISBN 3-540-00701-6



Attacks against computer systems can cause considerable economic or physical damage. High-quality development of security-critical systems is difficult, mainly because of the conflict between development costs and verifiable correctness.

Jürjens presents the UML extension UMLsec for secure systems development. It uses the standard UML extension mechanisms, and can be employed to evaluate UML specifications for vulnerabilities using a formal semantics of a simplified fragment of UML. Established rules of security engineering can be encapsulated and hence made available even to developers who are not specialists in security. As one example, Jürjens uncovers a flaw in the Common Electronic Purse Specification, and proposes and verifies a correction.

With a clear separation between the general description of his approach and its mathematical foundations, the book is ideally suited both for researchers and graduate students informal methods or UML and security and for advanced professionals writing critical applications.

Contents:

Part I: Prologue – (1) Introduction (2) Walk-through: Using UML for Security (3) Background;

Part II: Developing Secure Systems – (4) Secure Systems Development with UML

(5) Applications;

Part III: Tool Support – (6) Extending UML CASE Tools with Advanced Tools (7) A Formal Foundation (8) Formal Systems Development with UML;

Part IV: Epilogue – (9) Further Material (10) Outlook

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