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Nota di contenuto	1.Background on Components -- 2. A Type System for Components -- 3. Properties of the Type System -- 4.Background on - Types -- 5. Background on Session Types -- 6. Session Types Revisited -- 7. Subtyping -- 8. Polymorphism -- 9.Higher-Order Communication -- 10.Recursion -- 11.From - Types to Session Types -- 12. Background on - types for Lock Freedom -- 13 Background on Session Types for Progress -- 14 Progress as Compositional Lock Freedom. .
Sommario/riassunto	In this book we develop powerful techniques based on formal methods for the verification of correctness, consistency and safety properties related to dynamic reconfiguration and communication in complex distributed systems. In particular, static analysis techniques based on types and type systems are an adequate methodology considering their success in guaranteeing not only basic safety properties, but also more sophisticated ones like deadlock or lock freedom in concurrent settings. The main contributions of this book are twofold. i) We design a type system for a concurrent object-oriented calculus to statically ensure consistency of dynamic reconfigurations. ii) We define an encoding of the session pi-calculus, which models communication in distributed systems, into the standard typed pi-calculus. We use this encoding to derive properties like type safety and progress in the session pi-calculus by exploiting the corresponding properties in the standard typed pi-calculus.