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Altri autori (Persone)	ChenWuhui HuangHuawei
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Nota di contenuto	Chapter 1. Blockchain Scalability Fundamentals -- Chapter 2. Overview to Blockchain Scalability Challenges and Solutions -- Chapter 3. On-Chain and Off-Chain Scalability Techniques -- Chapter 4. Layered Sharding on Open Blockchain -- Chapter 5. Sharding-Based Scalable Consortium Blockchain -- Chapter 6. State Sharding for Permissioned Blockchain -- Chapter 7. Elastic Resource Allocation in Sharding-Based Blockchains -- Chapter 8. Dynamic Sharding: A Trade-OFF Between Security and Scalability -- Chapter 9. A Scalable and Secure Framework for 5G Networks Applications.
Sommario/riassunto	This book focuses on conducting a comprehensive analysis of blockchain scalability serving large-scale application scenarios, from the “what, why, how” three perspectives, layer by layer. Gathering the latest state-of-the-art research advances in the area of key issues and technologies for blockchain scalability, it also presents some special

and exciting insights on the existing and future blockchain scalability. Despite blockchain's merits of decentralization, immutability, non-repudiation, and traceability, the current blockchain has faced a serious scalability bottleneck. The scalability bottleneck problem is mainly manifested in two aspects: low-performance efficiency and difficulty in functional extension. First, the security and reliability of the blockchain system come from the fact that most nodes of the whole network participate in a distributed consensus to maintain the ledger. The high-cost consensus mechanism makes limited performance of blockchain, and there is a big gap between the actual large-scale application system. In addition, in order to ensure the security of a single blockchain system, data between different blockchain systems are relatively isolated, making it difficult for assets and data to interact. This book explores the scalability of blockchain in depth, proposes meaningful approaches to the problems mentioned above, and builds an original theoretical system of blockchain scalability. It describes the root of blockchain scalability problems, mainstream blockchain performance, the classification of existing scalability problem solutions, and some exciting sharding-based approaches. It also includes open issues and future directions to scale blockchain for complex practical application scenarios. As such, this book will be a valuable resource for students, researchers, engineers, and policymakers working in various areas related to blockchain scalability, which is also of great significance for understanding and solving the bottleneck of blockchain scalability and realizing the practical large-scale commercial application of blockchain.