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Nota di contenuto	Part I Study -- Chapter 1 Development and Applications of Supercomputing -- Chapter 2 Construction and Power Management of Supercomputing System -- Chapter 3 Network Communication in Supercomputing System -- Chapter 4 Building the Environment for HPC Applications -- Chapter 5 Supercomputer System Performance Evaluation Methods -- Part II Competition -- Chapter 6 Introduction to International Student Supercomputing Competitions -- Chapter 7 History and Prospects of ASC Student Supercomputer Challenge -- Chapter 8 Rules of ASC Student Supercomputer Challenge -- Part III Advances -- Chapter 9 The Competition Proposal -- Chapter 10 Design and Construction of the Clusters for the Competition -- Chapter 11 Optimization for the High Performance LINPACK Benchmark -- Chapter 12 Optimization for the Molecular Dynamics Software GROMACS --

Sommario/riassunto

This guide provides a comprehensive overview of High Performance Computing (HPC) to equip students with a full skill set including cluster setup, network selection, and a background of supercomputing competitions. It covers the system, architecture, evaluating approaches, and other practical supercomputing techniques. As the world's largest supercomputing hackathon, the ASC Student Supercomputer Challenge has attracted a growing number of new talent to supercomputing and has greatly promoted communications in the global HPC community. Enclosed in this book, readers will also find how to analyze and optimize supercomputing systems and applications in real science and engineering cases.
