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Titolo	A Practical Approach to High-Performance Computing / / by Sergei Kurgalin, Sergei Borzunov
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Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XI, 206 p. 35 illus.)
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Soggetti	Computer organization Software engineering Computer engineering Computer Systems Organization and Communication Networks Software Engineering/Programming and Operating Systems Computer Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Classification of Computing System Architecture Topologies of Computer Networks Fundamentals of Parallel Computing MPI Technology OpenMP Technology Implementation of Parallel Algorithms App. A, Algorithm Efficiency Estimation Methods App. B, Using the Linux Shell for Running Parallel Programs App. C, Introduction to the Fourier Transform App. D, Answers, Hints, Solutions to Problems Bibliography Name Index Index.
Sommario/riassunto	The book discusses the fundamentals of high-performance computing. The authors combine visualization, comprehensibility, and strictness in their material presentation, and thus influence the reader towards practical application and learning how to solve real computing problems. They address both key approaches to programming modern computing systems: multithreading-based parallelizing in shared memory systems, and applying message-passing technologies in distributed systems. The book is suitable for undergraduate and

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high-performance computing systems. Each chapter begins with a theoretical part, where the relevant terminology is introduced along with the basic theoretical results and methods of parallel programming, and concludes with a list of test questions and problems of varying difficulty. The authors include many solutions and hints, and often sample code.