

1. Record Nr.	UNINA9910357851203321
Autore	Kurgalin Sergei
Titolo	A Practical Approach to High-Performance Computing // by Sergei Kurgalin, Sergei Borzunov
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-27558-2
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XI, 206 p. 35 illus.)
Disciplina	004.35 004.11
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 graduate students, and for researchers and practitioners engaged with

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.
