1.
Record Nr.	UNINA9910788957903321
Titolo	Scientific computing with multicore and accelerators / / edited by Jakub Kurzak, David A. Bader, Jack Dongarra
Pubbl/distr/stampa	Boca Raton : , : CRC Press, , 2011
ISBN	0-429-10424-3
	1-138-11332-8
	1-4398-2537-8
Descrizione fisica	1 online resource (495 p.)
Collana	Chapman & Hall/CRC computational science ; ; 10
Classificazione	MAT000000MAT001000MAT021000
Altri autori (Persone)	KurzakJakub
	BaderDavid A
	DongarraJ. J
Disciplina	502.85
Soggetti	Science - Data processing
	Engineering - Data processing
	High performance computing
	Multiprocessors
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Dense linear algebra -- 2. Sparse linear algebra -- 3. Multigrid methods -- 4. Fast Fourier transforms -- 5. Combinatorial algorithms -- 6. Stencil algorithms -- 7. Bioinformatics -- 8. Molecular modeling -- 9. Complementary topics.
Sommario/riassunto	The current trend in microprocessor architecture is toward powerful multicore designs in which a node contains several full-featured processing cores, private and shared caches, and memory. The IBM Cell Broadband Engine (B.E.) and Graphics Processing Units (GPUs) are two accelerators that are used for a variety of computations, including signal processing and quantum chemistry. This is the first reference on the use of Cell B.E. and GPUs as accelerators for numerical kernels, algorithms, and computational science and engineering applications. With contributions from leading experts, the book covers a broad range of topics on the increased role of these accelerators in scientific computing--