Record Nr. UNINA9910781752603321 High performance computing [[electronic resource]]: from grids and **Titolo** clouds to exascale / / edited by Ian Foster ... [et al.] Pubbl/distr/stampa Amsterdam, The Netherlands, : IOS Press, 2011 **ISBN** 6613289973 1-283-28997-0 9786613289971 1-60750-803-6 Descrizione fisica 1 online resource (320 p.) Collana Advances in parallel computing, , 0927-5452;; v. 20 Fosterlan Altri autori (Persone) Disciplina 004 Soggetti High performance computing 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 indexes. Nota di contenuto Title Page; Preface; Contents; State-of-the-Art and Future Scenarios; The History of the Grid; Shaping the Petaflop-Era in Europe -Supercomputing Made in Julich; Exascale Computing and the Role of Co-Design; Fast Heterogeneous Computing: Principles and CUDA Programming; Grids and Clouds; Integrating Service and Desktop Grids at Middleware and Application Level; Crosscloud Computing; High Performance Computing as a Service; A Prototype Implementation of Desktop Clouds: Technologies and Systems: Component-Oriented Approaches for Software Development in the Extreme-Scale Computing Era An Operating System Strategy for General-Purpose Parallel Computing on Many-Core ArchitecturesHigh Performance Composition Operators in Component Models: High-Performance Computing on Heterogeneous Systems: Database Queries on CPU and GPU; Applications: Service-Oriented Data Analysis in Distributed Computing Systems; System Level Acceleration with Blue Gene/L: Grand Challenge Problems in Physiological Multi-Scale Modelling; Towards the Scalability of Real-Time Online Interactive Applications on Multiple Servers and Clouds Distributed Storage and Parallel Processing in Large-Scale Wireless Sensor NetworksSubject Index: Author Index

Sommario/riassunto

In the last decade, parallel computing technologies have transformed high-performance computing. Two trends have emerged: massively parallel computing leading to exascale on the one hand and moderately parallel applications, which have opened up high-performance computing for the masses, on the other. The availability of commodity hardware components, a wide spectrum of parallel applications in research and industry and user-friendly management and development tools have enabled access to parallel and high-performance computing for a wide spectrum of end users from research and academia to mid