Enabling Technologies for PetaFLOPS Computing (Paperback)

By Thomas Sterling, Paul C Messina, Paul H Smith

MIT Press Ltd, United States, 1995. Paperback. Book Condition: New. New.. 224 x 185 mm. Language: English . Brand New Book. Building a computer ten times more powerful than all the networked computing capability in the United States is the subject of this book by leading figures in the high performance computing community. It summarizes the near-term initiatives, including the technical and policy agendas for what could be a twenty-year effort to build a petaFLOP scale computer. (A FLOP -- Floating Point OPeration -- is a standard measure of computer performance and a PetaFLOP computer would perform a million billion of these operations per second.) Chapters focus on four interrelated areas: applications and algorithms, device technology, architecture and systems, and software technology.While a petaFLOPS machine is beyond anything within contemporary experience, early research into petaFLOPS system design and methodologies is essential to U.S. leadership in all facets of computing into the next century. The findings reported here explore new and fertile ground. Among them: construction of an effective petaFLOPS computing system will be feasible in two decades, although effectiveness and applicability will depend on dramatic cost reductions as well as innovative approaches to system software and programming methodologies; a mix...

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