1. Record Nr. UNINA9910338003903321 Autore Voss Michael Titolo Pro TBB [[electronic resource]]: C++ Parallel Programming with Threading Building Blocks / / by Michael Voss, Rafael Asenjo, James Reinders Pubbl/distr/stampa Berkeley, CA,: Springer Nature, 2019 Berkeley, CA:,: Apress:,: Imprint: Apress,, 2019 **ISBN** 1-4842-4398-6 Edizione [1st ed. 2019.] Descrizione fisica 1 online resource (LXVI, 754 p. 614 illus., 460 illus. in color.) 005.13 Disciplina Soggetti Programming languages (Electronic computers) Computer programming Algorithms Data structures (Computer science) Programming Languages, Compilers, Interpreters **Programming Techniques** Algorithm Analysis and Problem Complexity **Data Structures** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Part I -- Chapter 1: Jumping Right In - "Hello, TBB!" -- Chapter 2: Nota di contenuto Generic Parallel Algorithms -- Chapter 3: Flow Graphs -- Chapter 4: TBB and the C++ Parallel Standard Template Library -- Chapter 5: Synchronization: why and how to avoid it -- Chapter 6: Data Structures for Concurrency -- Chapter 7: Scalable Memory Allocation -- Chapter 8: Mapping Parallel Patterns to TBB -- Part II -- Chapter 9: The Pillars

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Flow Graphs with Async Nodes -- Chapter 19: Flow Graphs on steroids: OpenCL Nodes -- Chapter 20: TBB on NUMA architectures -- Appendix A: History and Inspiration -- Appendix B: TBB Précis -- Glossary. .

This open access book is a modern guide for all C++ programmers to learn Intel Threading Building Blocks (TBB). Written by TBB and parallel programming experts, this book reflects their collective decades of experience in developing and teaching parallel programming with TBB, offering their insights in an approachable manner. Throughout the book the authors present numerous examples and best practices to help you become an effective TBB programmer and leverage the power of parallel systems. Pro Intel Threading Building Blocks starts with the basics, explaining parallel algorithms and C++'s built-in standard template library for parallelism. You'll learn the key concepts of managing memory, working with data structures and how to handle typical issues with synchronization. Later chapters apply these ideas to complex systems to explain performance tradeoffs, mapping common parallel patterns, controlling threads and overhead, and extending TBB to program heterogeneous systems or system-on-chips. .