Using OpenMP in The Next Stage" by Dan Rue 2015-10-14 A guide to the most recent, advanced features of the widely used OpenMP parallel programming model, with coverage of major features in OpenMP 5.3. This book offers an in-depth, practical tutorial on advanced features in the widely used OpenMP parallel programming model. Written in a unique tutorial style. With the coming of the parallel computing era, computer scientists have turned their attention to designing programming models that are suited for high-performance parallel computing and supercomputing systems. Programming parallel systems is complicated by the fact that multiple processing units are simultaneously computing and moving data. This book offers an overview of some of the most prominent parallel programming models used in high-performance computing and supercomputing systems today. The chapters contribute to the understanding of what has been changed and added to OpenMP since the 2.5 specifications. It emphasizes four major and advanced areas: thread affinity (keeping threads close to their data); accelerators (special hardware to speed up certain operations); unrolling (parallelization with a large number of execution thread); and OpenMP (open multi-target programming with a runtime system). This book is an excellent resource for developers who want to access performance data; and a new binding of MPI to Fortran.

Using Advanced MPI by Ruud Van Der Pas 2017-10-20 A guide to the most recent, advanced features of the widely used OpenMP parallel programming model, with coverage of major features in OpenMP 5.3. This book offers an in-depth, practical tutorial on advanced features in the widely used OpenMP parallel programming model. Written in a unique tutorial style. With the coming of the parallel computing era, computer scientists have turned their attention to designing programming models that are suited for high-performance parallel computing and supercomputing systems. Programming parallel systems is complicated by the fact that multiple processing units are simultaneously computing and moving data. This book offers an overview of some of the most prominent parallel programming models used in high-performance computing and supercomputing systems today. The chapters contribute to the understanding of what has been changed and added to OpenMP since the 2.5 specifications. It emphasizes four major and advanced areas: thread affinity (keeping threads close to their data); accelerators (special hardware to speed up certain operations); unrolling (parallelization with a large number of execution thread); and OpenMP (open multi-target programming with a runtime system). This book is an excellent resource for developers who want to access performance data; and a new binding of MPI to Fortran.

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