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# Using Advanced MPI: Modern Features Of The Message-Passing Interface (Scientific And Engineering Computation)



## Synopsis

This book offers a practical guide to the advanced features of the MPI (Message-Passing Interface) standard library for writing programs for parallel computers. It covers new features added in MPI-3, the latest version of the MPI standard, and updates from MPI-2. Like its companion volume, *Using MPI*, the book takes an informal, example-driven, tutorial approach. The material in each chapter is organized according to the complexity of the programs used as examples, starting with the simplest example and moving to more complex ones. *Using Advanced MPI* covers major changes in MPI-3, including changes to remote memory access and one-sided communication that simplify semantics and enable better performance on modern hardware; new features such as nonblocking and neighborhood collectives for greater scalability on large systems; and minor updates to parallel I/O and dynamic processes. It also covers support for hybrid shared-memory/message-passing programming; `MPI_Message`, which aids in certain types of multithreaded programming; features that handle very large data; an interface that allows the programmer and the developer to access performance data; and a new binding of MPI to Fortran.

## Book Information

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