

# Tools for Parallel/Distributed Mathematical Computation

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## Abstract

A set of software tools for connecting heterogeneous tasks on networked computers as well as MIMD parallel machines is described. The purpose is to provide a convenient and practical approach to connect mathematical/scientific computing tasks, to build complex systems by integrating existing ones, and to perform parallel/distributed processing in symbolic and algebraic computation (SAC). The tools work with the widely available PVM (Parallel Virtual Machine). Efficient exchange of mathematical data is achieved through MP, an efficient mathematical data exchange protocol. The tools work well together but can also be used independently:

- Program compilation and distribution tools for PVM
- Common Lisp and MAXIMA Interface library to PVM
- Saclib to PVM interface library
- Generic run-time task scheduling library for PVM
- C-coded MP library for efficient mathematical and scientific data transfer
- MP-related utilities for Email- and Web-based SAC applications

The tools are available by public FTP.

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