

# Distributed SILC: An Easy-to-Use Interface for MPI-Based Parallel Matrix Computation Libraries

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**Abstract.** The present paper describes the design and implementation of distributed SILC (Simple Interface for Library Collections) that gives users access to a variety of MPI-based parallel matrix computation libraries in a flexible and environment-independent manner. Distributed SILC allows users to make use of MPI-based parallel matrix computation libraries not only in MPI-based parallel user programs but also in sequential user programs. Since user programs for SILC are free of a source-level dependency on particular libraries and computing environments, users can easily utilize alternative libraries and computing environments without any modification in the user programs. The experimental results of two test problems showed that the implemented SILC system achieved speedups of 2.69 and 7.54 using MPI-based parallel matrix computation libraries with 16 processes.