

Parallel Matrix Distribution Library for Sparse Matrix Solvers

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Abstract— We have developed the matrix distribution library for sparse matrix solvers. There are few libraries to realize matrix distribution and reordering. It is mainly because the data structure of the large sparse matrix can not be specified to one matrix format. Thus the present paper assumes the matrix format as distributed Compressed Row Storage (CRS) format which is used in many sparse linear solvers. We have developed the matrix distribution library based on this format. The input and output matrix format of our library is the same matrix format, so that it can be used for repeated matrix distribution and reordering.

The present paper introduces the matrix format, and the implementation of the matrix distribution library, and discusses the efficiency of the various matrix distribution methods for sparse matrix solvers.