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Evaluation of sparse factorization and triangular solution on multicore architectures

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Multicore processors will be the basic building blocks for computer systems ranging from laptops to supercomputers. New software developments at all levels are needed to fully utilize these systems. We are conducting performance evaluation of different parallel algorithms for sparse LU factorization and triangular solution on representative multicore machines, including an eight-core Intel Clovertown and an eight-core Sun Niagara2 with 64-way threading.

In this study, we include both pthreads and MPI implementations, and both left-looking (implemented in SuperLU$_MT$)$and right-looking(implemented in SuperLU_DIST)algorithm varian$
$looking algorithm is usually superior. We will present quantitative assessment of performance with various al$