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ABSTRACT: The GMRES method by Saad and Schultz is one of the most popular iterative methods for solving large sparse nonsymmetric linear systems of equations. The method is usually implemented using the Arnoldi process based on the modified Gram-Schmidt (MGS) method to compute orthonormal bases of certain Krylov subspaces. The MGS method requires many vector-vector operations, which can be difficult to implement efficiently on vector and parallel computers due to the low granularity of these operations. In [3,4] a new way to organize the computations in the GMRES method is presented, such that the vector-vector operations of the MGS method are replaced by the task of computing a QR factorization of a certain dense matrix. This paper presents timings for a parallel implementation on an IBM 3090-600S VF computer.