# Scalability of Hybrid Sparse Matrix Dense Vector (SpMV) Multiplication

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***Abstract*—Reproduce a Sparse Matrix Dense Vector Multiplication (SpMV) experiment in order to increase the cluster size and thread count for the purpose of analyzing scalability as these increase. We will examine several different work distribution methods (overflow, optimal, and "splitMatrix") in order to evaluate how these distribution methods behave as we scale the problem size as well as cluster and thread size. We will be utilizing the message passing interface (MPI) for communication between distributed memory segments (cluster nodes) as well as OpenMP to enable shared memory segments locally on each cluster node.**

***Keywords*-scalability;**