

Weinbub: Distributed High-Performance Parallel Mesh Generation with ViennaMesh

The ever-growing demand for higher accuracy in scientific simulations based on the discretization of equations given on physical domains is typically coupled with an increase in the number of mesh elements. Conventional mesh generation tools struggle to keep up with the increased workload, as they do not scale with the availability of, for example, multi-core CPUs. We present a parallel mesh generation approach for multi-core and distributed computing environments based on our generic meshing library ViennaMesh and on the Advancing Front mesh generation algorithm. Our approach is discussed in detail and performance results are shown.

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Last modified 10.6.2012