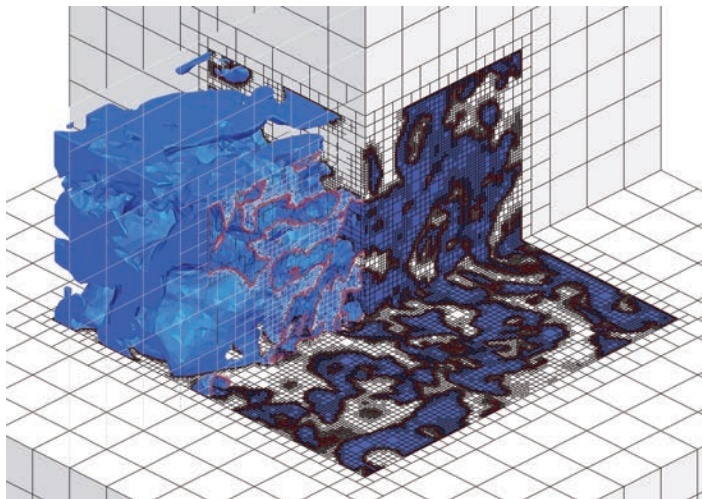


MyThOS

MyThOS - Modular Operating System for Massively Parallel Applications

The clock-speed of modern processors barely rises any longer. Instead, hard ware is moving towards placing multiple processing units on a single chip and interconnecting them. This development poses significant challenges towards software developers, be this in HPC or embedded systems. The current approach is focusing heavily on improved distribution of the work load and data and on efficient communication. Overheads induced by the operating system are often ignored. In the project MyThOS, a dedicated, minimal operating system will be developed, reducing the overhead for parallelism significantly through a modular architecture - the goal is to reduce the time to span threads by such an amount, that parallelism can be approached differently: processes experiencing too much load can

spawn new threads on the fly, while processes with too little load shut threads down. The developments will be validated within the project on challenging scenarios from molecular dynamics, fluid dynamics and distributed computation of multimedia data. The scope of scenarios addressed in MyThOS however goes very much beyond the use cases: especially the MyThOS approach is well suited for analyzing big data and for highly dynamical scenarios. The project is funded by the BMBF for three years, starting from 1.10.13 and brings together experts from academia and industry.



Contact: Colin W. Glass

Höchstleistungsrechenzentrum Universität Stuttgart
Nobelstraße 19, 70569 Stuttgart, Germany
Phone: +49-711-685-68038
Fax: +49-711-685-65832
E-Mail: glass@hls.de