

# Investigation of the Possibility of the Large-scale Simulation in the Large-scale Shared Memory System

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## Abstract

For industrial competitiveness enhancement of Japan, it is important to make the most of super computers including the Earth Simulator. However, those industrial use is insufficient due to the lack of optimized software for those.

AdvanceSoft Corp. has many practical simulation software which have been developed by national project or in-house and provided to industry for many years. Optimizing these software to super computers will help large-scale simulation and high precision computation and contribute industrial use.

In this project, we optimized the software ported to UV 2000 with the Earth Simulator more in last year, and measured large-scale parallel performance. We have started on-demand supercomputing service with simulation software, Advance/PHASE: First-principles Electronic Structure Calculation Software, Advance/FrontFlow/red: Fluid Dynamics Simulation Software, Advance/FrontSTR: Structural Analysis Software, Advance/FrontNoise: Acoustics Analysis Software, and Advance/DESSERT: Device Simulator, based on the result of the project, and then got one order from the industry with the Advance/PHASE.

**Keywords:** large-scale simulation, program tuning, improved algorism, performance of parallel processing, on-demand supercomputing