

Title	Jini技術とUNICOREを用いたリアルタイム可視化システムの構築
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Development of the real-time visualization system using Jini technology and UNICORE

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1960s, Computational Fluid Dynamics(CFD) is developed, Which solves Fluid Dynamics using the computer. In recent years, in the field of Fluid Dynamics, researches are done about physical science, engineering, the calculation modering and the numerical simulation. The demand which carries out the simulation of the physical phenomenon in detail has been increasing. However, problem is insufficient increase in calculation time and memory arose to the performance of the present computer with highly-efficient of calculation which are demanded.

Therefore, in order to shorten the calculation time which solves a large-scale problem, development of the distributed environment which used grid computing is performed. There are problems, such as failure of a computer and a network obstacle, in the grid computing environment. In this case, the flexible calculation environment where the original calculation performance by adding other computers dynamically.

There is Jini technology for making PC and a Workstation, cooperate on a network. Jini technology is calculation environmental construction using Jini technology is performed is strong, reliable, and flexibly built.

The importance of the visualization technology of a calculation result is increasing with improvement in the speed of a computer. After all calculation was completed, and a calculation result saved the computer and transmitted it to the user terminal.

Consequently, result can't checked in the middle of calculation processing before all calculation is completed, it was difficult to follow situation of calculation or to control the execution of a simulation. Therefore, the calculation result of a simulation on real time is needed.

In this research, We develop the real-time visualization system, which is using Jini technology and UNICORE. Jini technology is provides an environment for creating dynamically networked components and calculation efficiency improved. Moreover, before all calculation is completed, a result can check in the middle of calculation processing. Furthermore, it also became possible to force calculation to terminate, without waiting for a calculation end. The simulation was performed with the application of the fluid calculation in the field of fluid dynamics, and parallel computing.

For details, it introduces in this paper.