

National Research Grid Initiative (NAREGI)

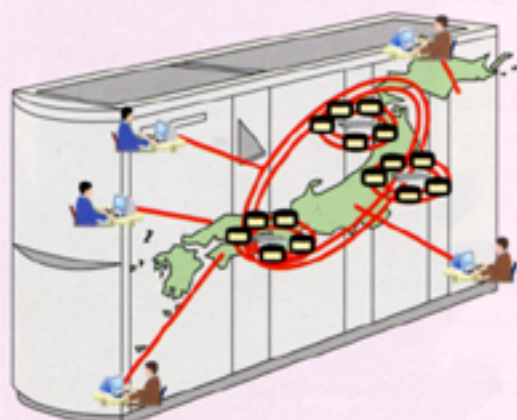
Aim of NAREGI Project and the Collaborative Center for Research Grid

NAREGI (National Research Grid Initiative) is one of the collaboration projects among industry, academic sector and government. The Collaborative Center for Research Grid, as a site of research and development for grid technology, aims on research and development of basic software for grid and network technology which are the foundation of the information technology in 21st century. The Center for Application Research and Development, which takes a part of the Project, conducts researches on application software and simulation which are essential for research and development utilizing the leading edge nanoscience and nanotechnology such as new

materials and next generation nano-devices. The Collaborative Center for Research Grid and the Center for Application Research and Development are connected with the ultra-high-speed Science Information Network (Super SINET).

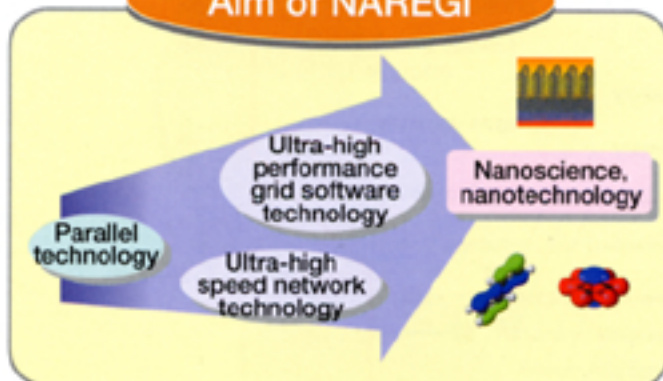
Japan's leading institutions from industry, academic sector and government takes part in NAREGI Project, and it is expected that the fruits of the project brings the promotion of research and development in related scientific fields, and furthermore, leads to the strengthening of Japan's competitiveness in the world and great economic effect.

What is "Grid"?



The "Grid" is the new computing technology which, like an "electric power grid", enables the utilization of the geographically distributed computational resources easily anytime and anywhere, just like plugging electric appliances into the electric outlet.

Aim of NAREGI



NAREGI Cooperative Research Institutions

- | | |
|-----------------|---|
| Industry | : Fujitsu, Hitachi, NEC, etc. including pharmacy, chemical, metal and material companies |
| Academic sector | : NII, Institute for Molecular Science, Tokyo Institute of Technology, Osaka University, Kyushu University, Kyushu Institute of Technology, Utsunomiya University, etc. |
| Government | : National Institute of Advanced Industrial Science and Technology, ITBL Project, etc. |

Research Themes

- **Research and development of resource management in the grid environment**
Global Scheduler, Brokering, Grid Info Services, Monitoring etc.
- **Research and development of grid programming models in the grid environment**
Grid Remote Procedure Call, Grid Message Passing Interface(MPI) etc.
- **Research and development of upper layer grid software/environment and grid application development tools**
Workflow Tool/Language, Visualization Tool, Problem Solving Environment etc.
- **Research and development of integration and operation technology for grid software**
Testing, integration, packaging, security, authentication etc.
- **Research and development of network communication infrastructure**
Network performance measurement, optimal packet routing algorithms, communication protocols etc.
- **Research and development on the adaptation of nano-simulation software to the grid environment**
Methodology for "grid-ready" nanoscience application software, such as analysis of parallelism, granularity, computational workload, memory requirement etc.