

# New Way of Connection: 'Grid Computing' to Solve Insoluble

July 30 2004

---

By connecting **hundreds or even thousands of computers together** to work on a single project, computer scientists are more frequently using a technique called **grid computing** to do previously intractable computations.

Grid computing takes advantage of “down time” when computers are not using their full processing power to provide quick answers to problems in fields such as genomics, engineering design and financial services. While parallel processing typically involves tying together multiple computers at a single site—all using one piece of software—a computer grid may be much more geographically dispersed, composed of many heterogeneous computers whose availability may change over time.

Computer scientists at the National Institute of Standards and Technology (NIST) recently launched a new project to improve understanding of how computer grids react to volatile conditions. A computer grid’s strength—the teaming of many computers—also makes it more vulnerable to failures, viruses, sudden changes in workload and cyber attacks such as denial of service. NIST researchers are developing computerized models that will help establish how vulnerable grid networks are to failure. They hope to create ways to detect failure quickly and then fix the problem.

Originally developed as a way to connect supercomputers working on extremely complex problems like climate modeling, grid computing is rapidly finding commercial applications. Already some investment

companies are using grid computers to analyze shifts in financial markets in real time. And pharmaceutical companies are beginning to use them to overcome the computational challenges of developing new drugs.

As commercial applications grow, protecting such networks and ensuring their reliability will become more critical. The NIST researchers hope to complete their models by early next year.

Source: [NIST](#)

Citation: New Way of Connection: 'Grid Computing' to Solve Insoluble (2004, July 30) retrieved 19 April 2024 from <https://phys.org/news/2004-07-grid-insoluble.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.