

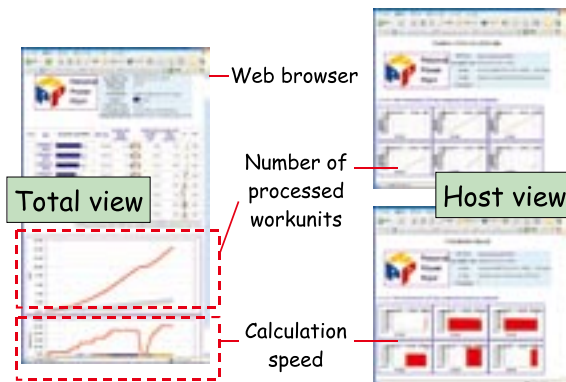
P2P-Based Middleware Enabling Transfer and Aggregation of Computational Resources

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AIST Today Vol. 4, No.12
(2004) 27

P3 is middleware used for distributed computing that makes effective use of existing PCs. It enables engineers and scientists to harvest PC's compute power of existing computers in their organization. It also enables outside contributors to participate in research projects that are too massive for a single organization to handle. Unlike Conventional distributed computing projects, in P3 a "participant" means not only a "resource provider" but also a "resource user" because the participant both provides and uses the power.

<http://p-three.sf.net/>
<http://www.jxta.org/universities/aist.html>



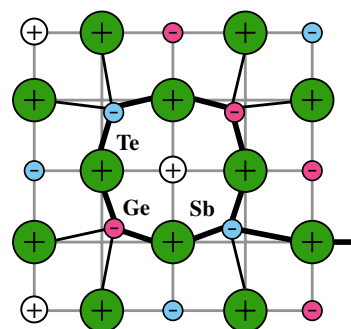
Job monitor showing condition of PCs and a job
Acknowledgment : Development of P3 is partly supported by the Information-Technology Promotion Agency (IPA) "Next Generation Software Development" project.

What are the Real Structures of Materials for Optical Disc ?

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AIST Today Vol. 4, No.12
(2004) 20-22

Rewritable optical phase-change discs, such as CD-RW and DVD-RW are now available to store movies, musics and business files. However, the high-speed switching mechanism due to the phase transition has not well been understood. In CAN-FOR, we recently cleared the mechanism by use of a synchrotron radiation beam line in Spring-8. The phase transition in writing and erasing happens due to a small shift of Ge atom in between an off-central position and a tetrahedral bonding position surrounded by neighbor Te atoms.



A distorted rock salt structure of Ge₂Sb₂Te₅ crystal. The unit is constructed by a ring of a network: [-Te-Ge-Te-Sb-Te-Ge-Sb-]Sb. In the ring, there exists a positive charged hole for stabilizing the system.