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P2P Distributed Computing Platform: Korea@Home

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Overview

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- ***Korea@Home*** : A Software Platform for Distributed Computing using Volunteer Computer Resources on Internet
- Features
 - Hybrid Peer-to-Peer architecture
 - Secure PKI-based Security and Digital Signature
 - Web Services with SOAP messaging



Goals

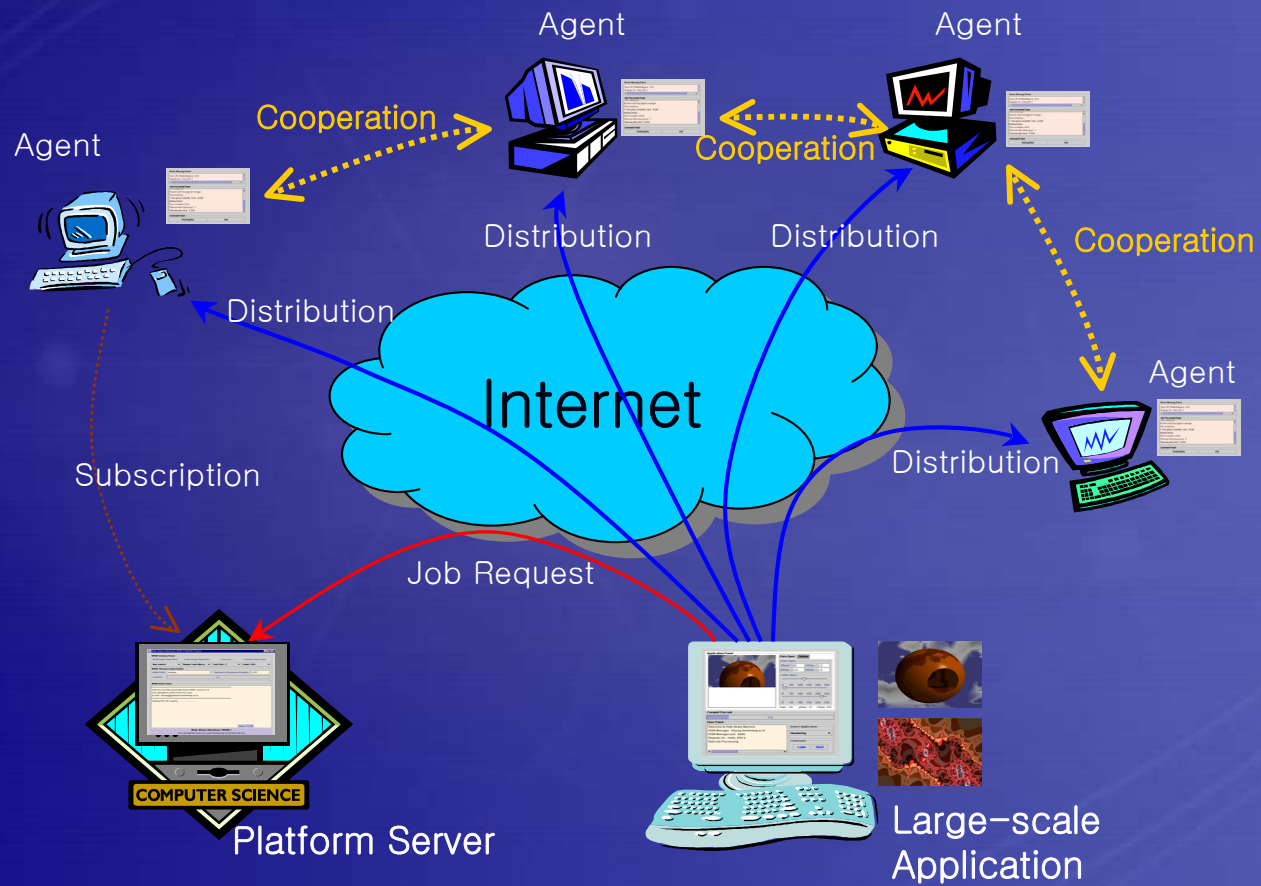
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- Obtaining Valuable **Computing Power** from Idle Resources
- Providing Distributed Computing **Framework** to Application Developers
- Lifting up **Software Development Capabilities** from trying to solve and experiment on various technical issues
- Enlightening **IT mind** among non-technical people



Architecture

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History

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- 2002. Prototype
 - About 6,000 PCs
 - Max 644 Gflops / Avg. 470.6 Gflops
- 2003. 11. the 1st version
 - About 2,500 PCs through 3 months
 - Max 2.98 Tflops / Avg. 874 Gflops
- Current
 - About 5,000 PCs
 - Applications
 - Virtual Screening to find drug candidates (3 target completed)
 - Protein Folding Analysis
 - Global Risk Management on Financial Investment (completed)
 - Prediction of Climate Change (planned)
 - 3D Image Rendering (planned)
- 2004. 10 Announcement of Korea@Home2 scheduled



Technical Concentration

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- Make PC agents more intelligent
- Developing general framework on P2P
- Security and Reliability Issues
- Networking Issues such as IPv6, various connections, ...
- Compatibility with existing application-friendly techniques , e.g., MPI, COM



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Thanks a lot! ^^

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