Special Guest Lectures

A Workflow-enabled Grid-Portal for Bioinformatics

Sandra Gesing, University of Tuebingen

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Abstract:
The area of bioinformatics covers a broad range of rather different topics. In all these fields an enormous number of complex and sophisticated algorithms and tools has been developed to aid the research activities. These tools often require specific computational resources and rather advanced computational skills for the installation and use of the software. However, scientists of the disciplines biology, biochemistry, and biomedicine want to focus on their specific question, combing all kinds of different approaches, but do not want to deal with the unpleasant details of software installation and practicability. To enable efficient interaction with existing tools and to allow various combinations, we are designing a workflow-enabled grid-portal. The specific characteristics of workflows for bioinformatics are among others challenging large data set sizes, heterogenity of data, diversity of data formats and long running tasks (from hours up to weeks). However, the workflows themselves are not very complicated from a structural point of view. The presentation will introduce to the intended infrastructure and to custom portlets for invoking services and workflows.

Speaker's Bio:
Sandra Gesing is a German PhD student in the group of Prof. Kohlbacher in the Division for Simulation of Biological Systems (http://www-bs.informatik.uni-tuebingen.de/) and a research associate at the computer center (http://www.zdv.uni-tuebingen.de/wir/index.html), University of Tuebingen. She took up the PHD position shortly after completing her extramural studies in computer science with a focus on computational geometry and software engineering at the FernUniversitaet Hagen. She has led long-term software projects and worked full-time for many years as systems programmer in industry, while also serving an apprenticeship and doing her diploma as an extramural student. For the last two years she has been working on the TueBiGrid project (The Tuebingen Bioinformatics Grid). The goal of this project is the design and implementation of a grid infrastructure for parallel and distributed applications in the area of bioinformatics, particularly in the field of proteomics and systems biology. Since this year she is participating in the bwGRiD project (a D-Grid project) in the work groups "Usermanagement" and "Grid-Portals" besides administrating the grid infrastructure. Sandra's PhD project aims to understand the requirements of life science applications, and how these requirements can be met while running those applications as workflows on the Grid. Another goal of the project is to simplify the handling of these tools and giving users access to these tools via a portal.

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2003 Digital Media Center • Telephone: +1 225/578-5890 • Fax: +1 225/578-8957