FloodGrid portal with built-in workflow management.

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Abstract

This paper describes the design and implementation of workflow system used by our FloodGrid application portal. The workflow system is responsible for the execution of a cascade of simulations in the Grid environment and consists of three main components: a base workflow engine developed in Java, a java interface to the Grid and a web portal based on Jetspeed framework. The workflow engine and portal are described in detail.

Key Words: Portlets, workflow, grid computing, Jetspeed

1.Introduction

In recent years a number of scientific projects with international (even global) participation emerged as an answer to increasingly complicated problems of modern science – a well-organized business, with dense network of cooperation between people, organizations and countries. Such cooperation also requires an effective toolset for communication, experiment management and results sharing. The natural way to produce such a toolset is to develop a network-enabled software suite. Such software suites exist – although mainly incomplete and not mature – and in recent years are becoming more oriented toward the paradigm of virtual world-wide resource sharing – Grid computing.

The basic perpetual cycle of work in a scientific virtual organization is simple – data is processed, another data is created. Of course, new data also enters the virtual organization and produced data is used, viewed, analyzed and interpreted to obtain results as the main purpose of the actual existence of the organization.

So we begin the analysis of the software infrastructure with the word data, and this tells us that the support of work with this data is one important part of the infrastructure – the data management. Another part of the infrastructure is in the core of the cycle – the processing facility. This is the oldest part of any software and the very first PSEs were just a layer of control above such a computational core. Current efforts for computation management widely

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