

ABSTRACT

DISTRIBUTED STORAGE IN WEB SERVICE BASED GRID SYSTEMS

Nagy Zsombor, zsombor@niif.hu

NIIFI

In the presentation in which we first first give a brief overview of the distributed file and storage systems evolution up to its current state we introduce a novel distributed storage, called Grid Underground (GUG), i.e. the next generation web service based ClusterGrid middleware. Then, we discuss its architecture, the available fundamental services, and we illustrate the production system through real-application examples.

GUG has four elementary components:

- The Storage Controllers store instances of files.
- The Storage Manager handles the user's file and directory operations and gets them executes on the Controllers and on the Catalog.
- The Distributed Hash Catalog (DHC) Node that handles meta-data traffic can store part of the file and directory catalog.
- The Distributed Hash Catalog Manager (DM) manages the existing DHC Nodes, i.e. checks their availability and operability, implementing a high availability distributed catalog system.

With the help of the Storage Controllers and the Distributed Hash Catalog the user's request can be served in an easy-to-use, and straightforward way.

The system was designed to allow the user to see the storage management system as a remote file system, where he/she has a home directory from/to he/she can download/upload files from the client's local directory, or can manipulate meta-data, such as create directories. The system is accessible in two ways: either through one of the Storage Managers directly, or through a Command Line Interface (CLI) client being similar interface to the common UNIX file system commands.