

## **dCache: powerful storage made easy.**

In Spring 2011, the dCache.org collaboration, in partnership with the European Middleware Initiative (EMI), will provide a new major release of the dCache Storage Technology. Similar to the currently deployed major release, the new one will be supported for an extended period of time, which will be at least one year. The new release solves the increasing challenges imposed by those communities with storage and performance requirements significantly exceeding those of the LHC experiments. As these new e-science communities focus on web technology for data access and control, dCache has implemented the most relevant standards to match those requirements. By adopting these standards, dCache may be deployed as an in-place substitute for expensive industry solutions. The most prominent standard is the NFS 4.1 (pNFS) protocol, expected to become the leading industry standard for accessing data within the next 12 months. dCache is the first storage system to support this standard. Another very important standard supported by dCache is the WebDAV protocol as clients exist for all popular operating systems. Beside providing industry standards, dCache has significantly improved the support for HEP and LHC specific applications that are dependent on proprietary protocols. This presentation will provide detailed test results comparing performance of the various data access mechanisms. In addition to discussing interoperability improvements, the authors will elaborate on the integration of EMI components into dCache and on the improvements with installing and operating dCache with the new and easy-to-handle configuration system. A second focus will be on the enhanced data distribution mechanism between dCache pool nodes on incoming and pool-to-pool transfers. Finally the revised and unified authentication and authorization system, gPlazma-2, will be introduced and discussed.

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