Some news from dCache

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on behalf of

the dCache team
Outline

- Something new, part 1
- Something new, part 2
- Summary
Something new, part 1

- dCache xrootd support has two parts:
  - **The core** xrootd protocol support (stable)
  - **Adaptation** around xrootd (rapidly changing) e.g.:
    - ALICE provide token information for authentication
    - Federated namespace require VO-specific name-space mappings

- dCache's xrootd support is monolithic:
  - Difficult for people to help or “take joint-ownership” of getting things working.
  - Updates of the “rapidly changing” part linked to dCache release cycles.
Something new: plugins

- Introducing plugins for dCache's xrootd.
  - Two kinds of plugins:
    - Authentication
    - Authorisation and name-space mapping.
- Deployment is simple: drop in a single jar file
- Plugins use normal dCache configuration
- We have moved existing source code to public repo,
  - we continue to maintain this code … but we welcome help
- Anyone can create their own plugins
- What about testing all this? ...
Something new, part 2

• We are currently restructuring dCache source code
  • Moving to maven
  • Splintering dCache into (many) small, reusable modules
  • Some of these will live outside dCache, ... encouraging reuse.
• Introducing ...
Something new, part 2

- We are currently restructuring dCache source code
  - Moving to maven
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- Introducing ...
  - xrootd4j
Something new: xrootd4j

- dCache's xrootd support as a library
  - Pure Java implementation of xrootd protocol (now with plugin support)
  - Written using Netty: a high-performance IO framework from JBoss
  - Runs on any platform that supports a Java Virtual Machine (i.e., any platform)
- Located in a public github repository:
  https://github.com/gbehrmann/xrootd4j
- Available under an open-source licence (LGPL)
- Comes with example, working stand-alone server
Xrootd4j: getting started

• Three steps:
  • Check out:
    `git clone git://github.com/gbehrmann/xrootd4j.git`
  • Compile:
    `cd xrootd4j; mvn package`
  • Run:
    `java -jar xrootd-standalone/target/xrootd4j-standalone-1.0.SNAPSHOT-jar-with-dependencies.jar`
• Congratulations: you have a running xrootd server, serving the local filesystem
What next?

- Releasing **xrootd4j v1.0**
  - Pushing release into public maven repo
  - Projects can use this to pull in xrootd support
    - dCache will be doing this
- Use as a basis for **plugin development**
  - Easy to deploy
  - Easy to test a dCache plugin
- Used in **new xrootd projects**
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Summary

- dCache now supports xrootd plugins
- dCache's xrootd protocol support now an external library: xrootd4j
- Provide a stand-alone server to allow easy testing
Thanks