

Status of the Latfor Datagrid

D. Pleiter



Credits



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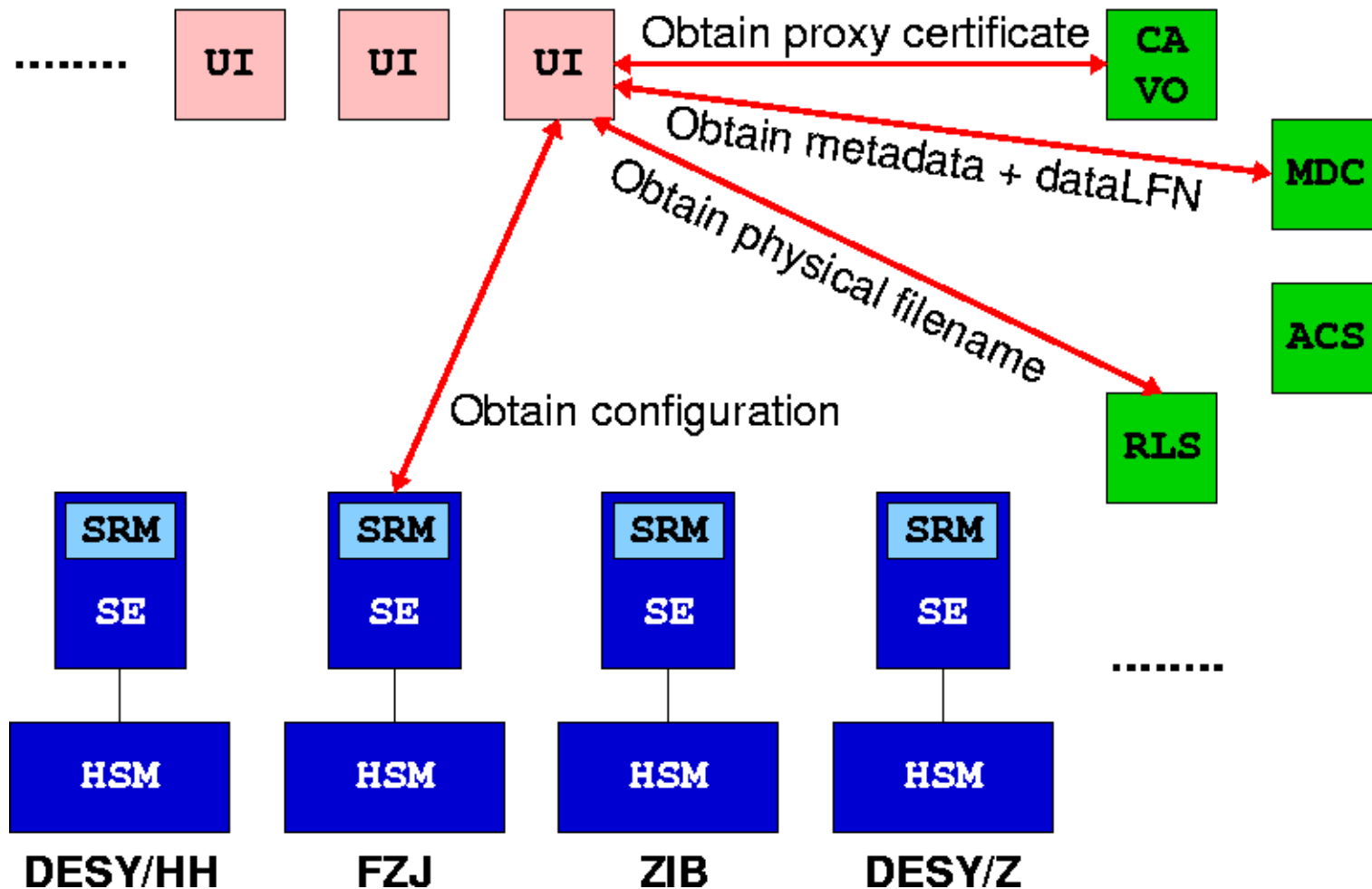
ZIB Berlin:

Hinnerk Stüben, Stefan Wollny

Univ. Wuppertal:

Boris Orth

Grid Components: an Overview

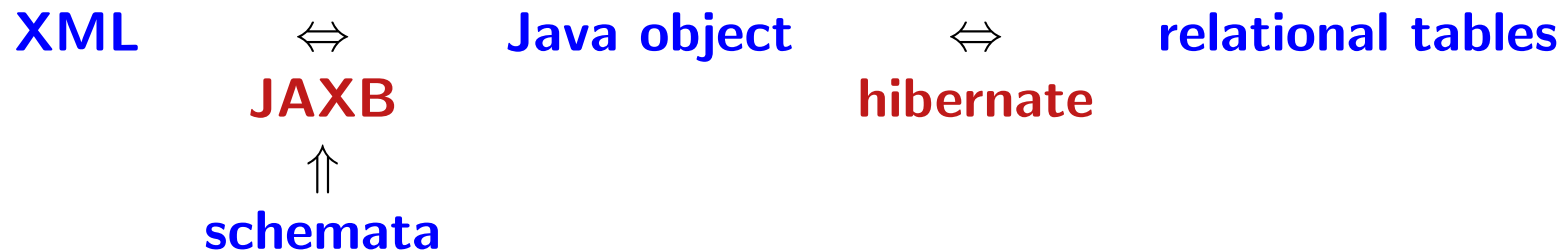


Metadata Catalogue (MDC)

- Requirements:
- MDC must be extensible
 - Want to use relational database
 - Usable beyond ILDG

Solution:

[D. Melkumyan]



Advantages:

- Solution as extensible as schemata
- Variety of relational databases supported (we use mySQL)
- Usable beyond ILDG (we plan extension to astroparticle physics)
- Easy to install on different platforms

MDC Implementation Issues

- ❑ Not all features of XML schema supported
 - ☞ Use modified (but equivalent) ILDG schemata
- ❑ Current implementation of XPath queries slow
 - ☞ Consider other query syntax
 - ☞ Restrict possible queries to relevant use cases

Middleware

[M. Ernst]

❑ **LCG-2** software is used, e.g.

- Replica catalogues
- Data management client tools



❑ Using **dCache** for SE with SRM interfaces

- Jointly developed by DESY and Fermilab
- **Grid FTP** and Kerberos Ftp access, **SRM interface**
- Runs on various platforms and supports different HSM systems



❑ Using GermanGrid certificates from GridKA, accepting certificates from LCG-CAs (e.g. CNRS/France, eScience/UK, INFN/Italy, FNAL/USA)

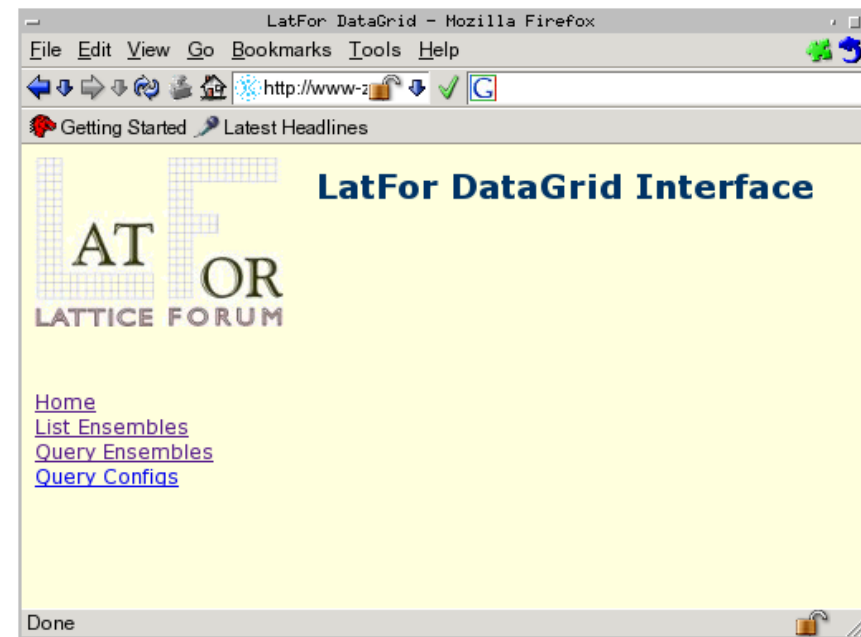
Access Control Service (ACS)

- ❑ Latfor-MDC will for each ensemble store permissions for
 - modifying metadata
 - inserting/updating/deleting configurations
 - downloading configurations
- ❑ Plan implementation of MDC as web-service which allows privileged operations by using X.509 authentication
- ❑ Permissions are propagated to SE via attributes implemented in the LCG replica metadata service
- ❑ SE have to enforce access rights (e.g. by dynamic generation of Unix groups)

How to Obtain a Configuration? (MDC)

Query Metadata Catalogue

1. Search for ensemble → **markovChainURI**
2. Download **ensemble XML document**
3. Search corresponding configurations → **dataLFN**
4. Download **configuration XML document**



Prototype at

<http://www-zeuthen.desy.de/latfor/ldg/demo>

How to Obtain a Configuration? (Middleware)

1. Use **dataLFN** to search for replicum → **SURL**
2. Download **binary configuration**

```
% grid-proxy-init
Your identity: /O=GermanGrid/OU=DESY/CN=Dirk Pleiter
Enter GRID pass phrase for this identity:
Creating proxy ..... Done
Your proxy is valid until: Sat Nov 27 09:29:01 2004

% lcg-cp --vo ildg \
  lfn:qcdfs_b5p40kp13610-24x48_bqcd.561.1.1.01500.tar \
  file:$HOME/config.tar

% ls $HOME/config.tar
/home/pleiter/config.tar
```

Summary: Status of Latfor Datagrid

- ✓ Initial prototype **Metadata Catalogue** (MDC) running
- ✗ **User tools** for real production use not implemented yet
- ✓ **Virtual Organisation** (VO) installed
Associated resources (e.g. SE) published via GIS
- ✓ **Replica Location Service** (RLS) running
- ✓ 4 **Storage Elements** (SE) installed (3 with HSM)
- ✗ **Access Control Service** (ACS) to be designed & implemented
- ✓ O(8) ensembles, O(10,000) configurations marked-up, inserted into MDC, uploaded to SE, registered in RLS