**What is AMGA?** (ARDA Metadata Grid Application)

- Metadata Catalogue of EGEE's gLite 3.1 Middleware
  - Metadata is data about data, On the Grid: information about files
  - But also simplified DB access on the Grid

**Features**

- Modular back-end: Oracle, PostgreSQL, MySQL, SQLite
- Modular front-end: TCP Streaming, SOAP WS-DAIR
- Multi-threaded Multi-process Hybrid model
- Hierarchical Organisation: Metadata organised in a tree-like structure
- Import existing databases to AMGA
- Security: SSL, GSI, VOMS and ACL
- Language: AMGA Metadata Language, Native SQL
- Replication: Master/Slave Model

**Metadata Federation**

- With distributed metadata, it is very necessary to have a mechanism to integrate them seamlessly.
- It provides a user with a virtualized view on metadata as if one metadata server has all data which are actually distributed at multiple sites.

**Client-Side Federation**

- Low Overhead at Server Side
- Only works with C++ APIs Currently

**Server-Side Federation**

- High Overhead on Server Side
- Works with all the APIs: Java, PHP, Python, Perl

**AMGA Commands for Federation**

- fed_mount <site> /directory
- mount a directory from the site
- fedUnmount /directory
- unmount a directory
- fed_list
- List all the information about mounted directory
- fed_policy
  - show currentl policy
- fed_check_failure
  - show whether last command had failures

**Fault Handling in AMGA Federation**

- User Defined Policies
  - Ignore Connection Failure (true/false)
  - Ignore Execution Failure (true/false)
  - Possible to check partial failures When the policy is set to ignore the connection & execution failures

<table>
<thead>
<tr>
<th>Access Random Server</th>
<th>listAttr, addentry, addentries, stat, insert, INSERT</th>
<th>If any successes, Then it is OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access All Server</td>
<td>getAttr, find, findentries, ls, dir, chmod, chown, acl, removeEntries, selectattr, SELECT, DELETE, setAttr, updateattr, update, UPDATE, rm</td>
<td>If fault in a server, follows preset policy</td>
</tr>
<tr>
<td>None</td>
<td>All the others</td>
<td>Not allowed</td>
</tr>
</tbody>
</table>

**Current Limitations on AMGA Federation**

- No Schema Heterogeneity is allowed
- Federating Directories with different Names is not allowed
- No Distributed Join is allowed
- No Transaction is Supported

**AMGA 2.1 Release (Planned at this October)**

- Federation
- AMGA Manager (AMGA GUI Client)
- Some bug Fixes

Please visit the AMGA demo booth!!

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