

Metadata Federation with AMGA

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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

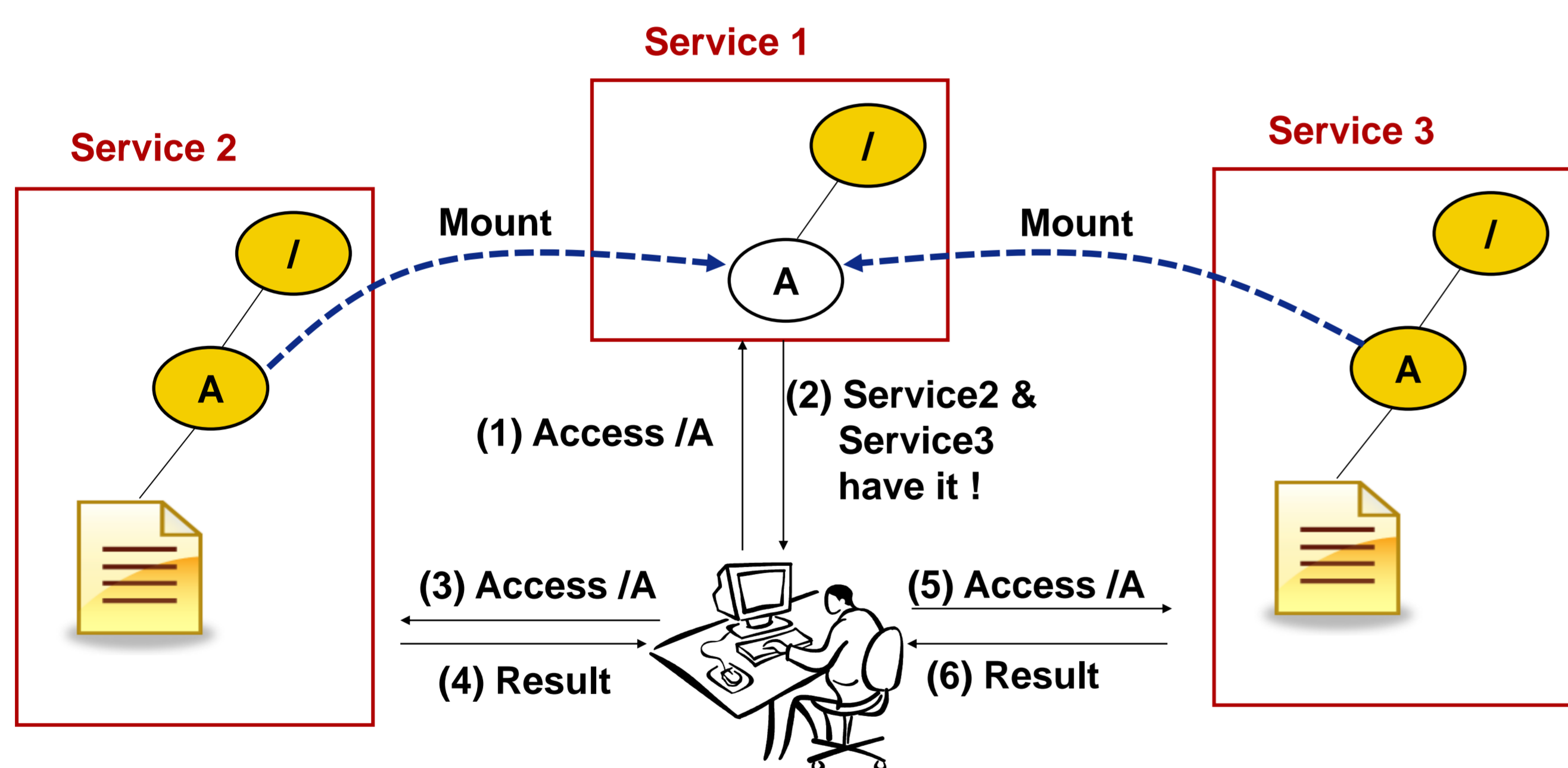
- Modular back-end : Oracle, PostgreSQL, MySQL, SQLite
- Modular front-end : TCP Streaming, SOAP WS-DAIR
- Multi-threaded Multi-process Hybrid model
- Hierarchical Organisation : Metadata organised in a tree-like structure
- Import existing databases to AMGA
- Security : SSL, GSI, VOMS and ACL
- Language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

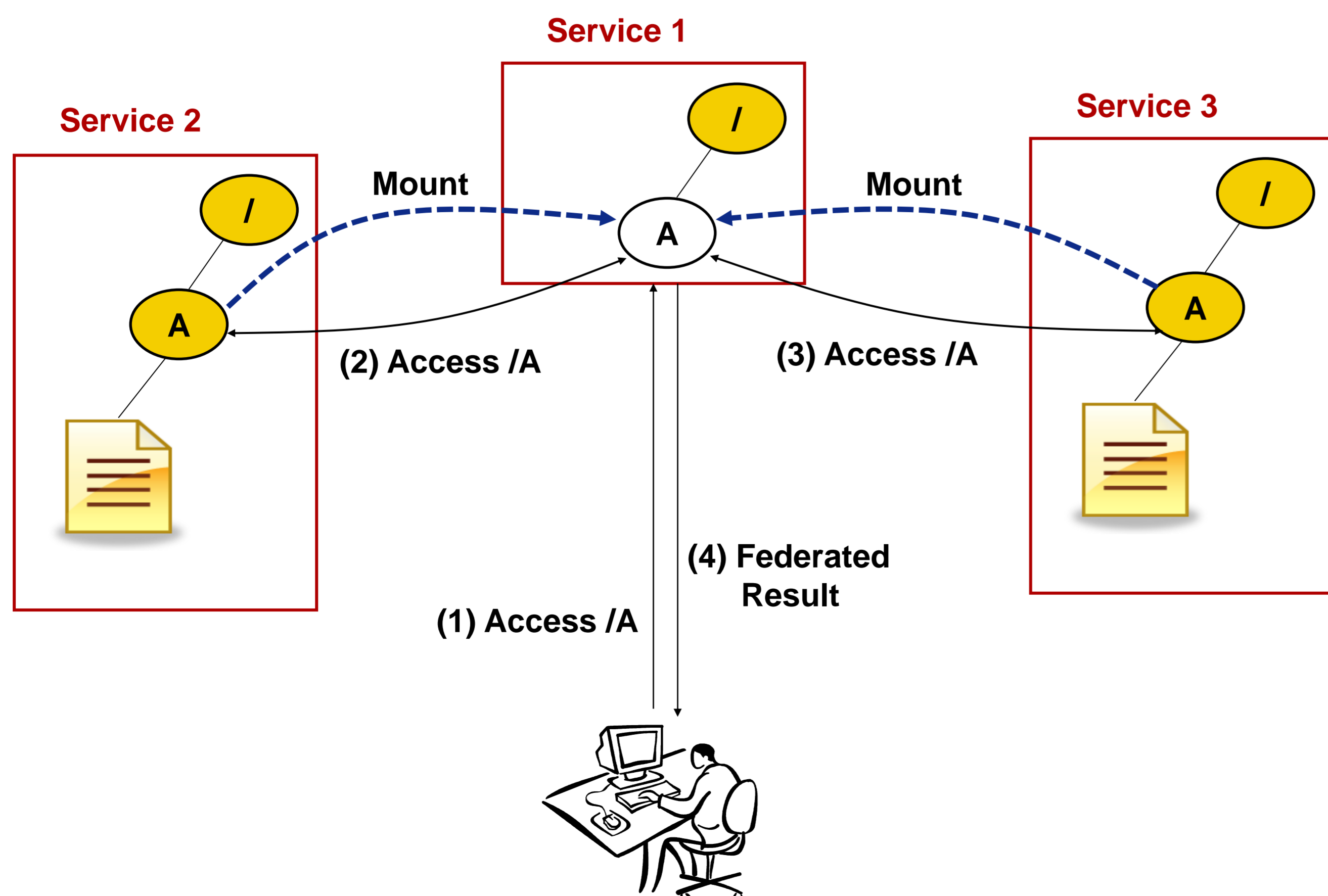
Client-Side Federation

- 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
- `fed_umount /directory`
 - unmount a directory
- `fed_list`
 - List all the information about mounted directory
- `fed_policy`
 - show current 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

Access Random Server	listAttr, addentry, addentries, stat, insert, INSERT	If any successes, Then it is OK
Access All Server	getAttr, find, listentries, ls, dir, chmod, chown, acl..., removeEntries, selectattr, SELECT, DELETE, setAttr, updateattr, update, UPDATE, rm	If fault in a server, follows preset policy
None	All the others	Not allowed

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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