



EUROPEAN MIDDLEWARE INITIATIVE

S13N in EMI

(Delegation, GLUE 2.0)

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Setting the scene: SRM

- SRM
 - Protocol for controlling storage
- Delegation
 - Allows an SRM server to act “on behalf of” end-user.
 - Creating X.509 certificate & private key on server, signed by end-user.
- GSI
 - V. similar to SSLv3 but incompatible.
 - Allows clients to trigger delegation

Why delegate?

- Protocol-independent 3rd-party copy
srmCopy
- Reserving network bandwidth
srmPrepareTo(Get|Put), srm(Get|Put)Done,
srmCopy
- X.509-aware tertiary storage
SrmBringOnline, srmPrepareTo(Get|Put),
srm(Get|Put)Done, srmCopy
- Federated SRM
Everything except srmPing.

Why drop GSI?

- GSI is **not a standard** (SSLv3 is)
- Coupling delegation with transport negotiation is **inflexible**.
- It's **not widely used** outside of Grid
- Only libraries are coming from a **single vendor**: Globus
- Hard to add advanced features; e.g., **no hardware acceleration**.

What to do about delegation?

- If delegation isn't needed then SSLv3 should work fine.
- When delegation is needed then client requires some extra functionality.
- Soln: a service that allows delegation.
(NB. we're **not** talking about a single, per-site shared service; rather, each service has a common extra API)

Delegation Services

Name	Tech.	C / Native		Java / JVM		Supported
		Client	Server	Client	Server	
Globus Credential Delegation Service	SOAP	Y	Y	N	N	N
GridSite Delegation Service	SOAP	Y	Y	Y	Y	Y
Globus New Delegation Service	REST	N	N	N	N	Y
IVOA Delegation Service	REST	N	N	Y	Y	M

Introducing the winner

- GDS is a **de facto standard**.
 - Developed ~2005 by Andrew McNab for web management software.
 - Adopted by gLite, after going through a review process
- Current version is v2.0.0
 - In production (FTS, GridSite, ...)
- **Two** independent libraries (Java and C), both provide **client** and **server**.

GDS: an EMI standard

- Other services in EMI also need to delegate
 - EMI ES (execution service), FTS, ...
- Agreement to use GDS within EMI.
- Current API docs need tidying up:
 - Conflates documenting software with documenting the standard,
 - Leaves some things too vague.
- Some work underway in this area

Taking it further

- GDS is a “standard” only within EMI.
 - Not endorsed by any standards body.
- No obviously applicable standard
- Should we start an OGF WG ?
 - Suggest writing up GDS as an experience report
- See BoF session, this Thursday

GLUE 2.0: motivation

- GLUE is an **info-model** for describing grid resources.
- Current version is **GLUE v1.3**
 - **Backwards compatible** with prev. versions
 - Somewhat evolved, **ad-hoc design**
 - Hard to publish what's deployed
 - SRM must be published twice,
 - Naming conventions used to tie objects.
 - Problems in representing cluster partitioning.
- Solution: **GLUE v2.0**

GLUE 2.0: the standard

- Breaks backwards compatibility
 - More structured, hierarchical approach.
- Multiple documents
 - Technology agnostic, general document
 - Documents describing how to store information using different technologies.
- General document finished 2009
- At least two renditions:
 - LDAP (completed), XML (WiP)

GLUE 2.0: now (+/- a bit)

- EMI-1 includes support for GLUE 2.0
 - LDAP schema support
 - Information published as v1.3 and v2.0
 - Publish different versions side-by-side.
 - Available v2.0 information similar to v1.3
 - Clients use v1.3 initially.
 - With EMI-2, clients will use GLUE 2.0.
- QA tools for validating GLUE v2.0
(LDAP Schemata are quite primitive)

GLUE 2.0: in the future

- Clients move from using v1.3 to use v2.0
 - Coming with EMI-2
- Enrich publishing of GLUE 2.0 information
- Drop support for GLUE 1.3

Summary

- S13n of delegation has started
- Moving to GLUE 2.0 to overcome limitations of GLUE 1.3



Thank you!

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