Service Registry

JRA1, Infrastructure

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Overview

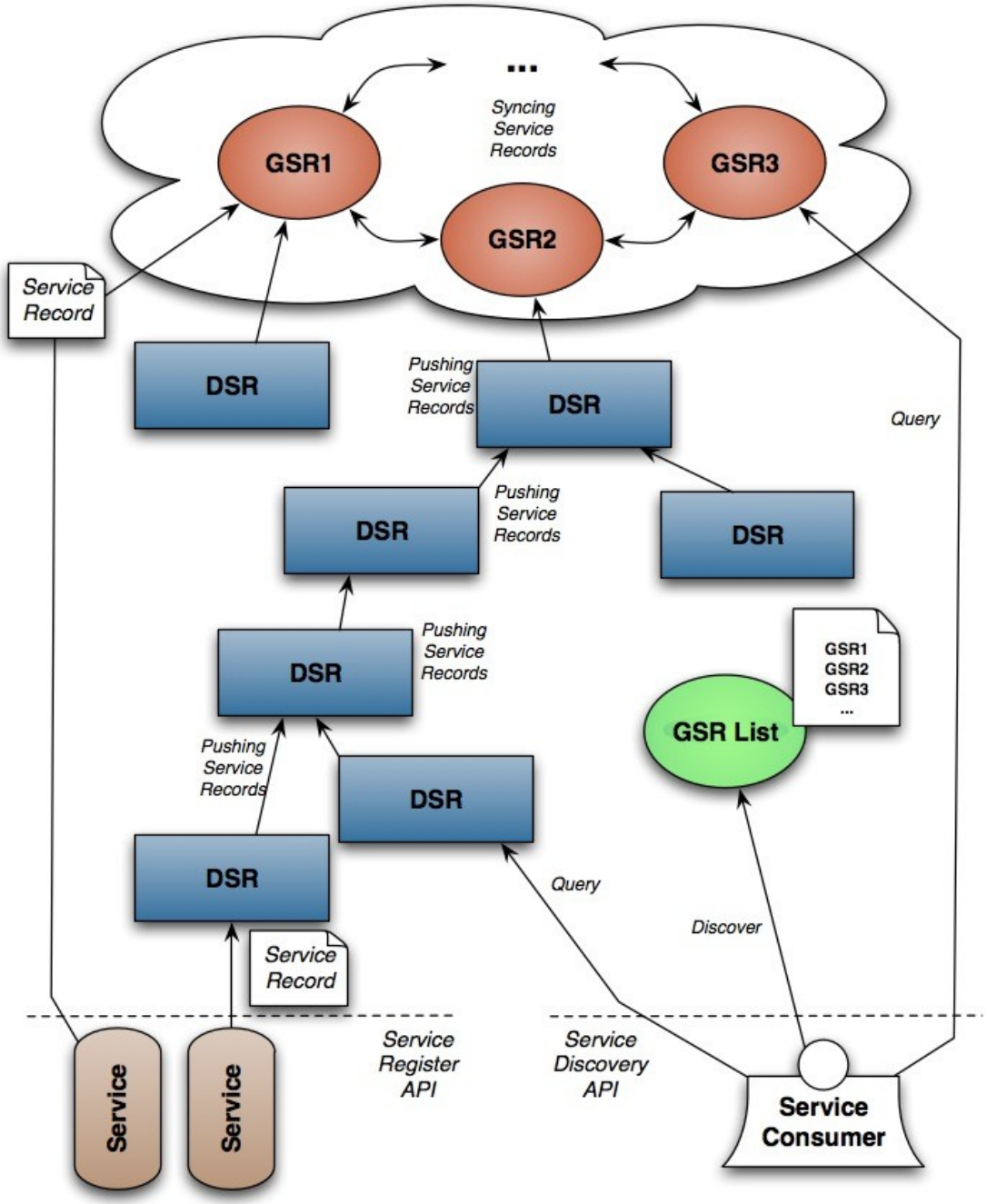
- Service discovery
- Requirements
- EMI Registry design plan
- The answers
- Status report

Service discovery

- Available solutions
  - GOCDB, ARC LDAP Infosys, Unicore registry, (ARC ISIS – Information System Indexing Service)
- Used by
  - clients and (other) services as well
- Global Scope
- Various type of information
- Different protocols, security, etc.

Requirements

- Discover the existence of services
- Scalable
- Robust
- Federated (!)
- Other requirements may appears:
  - Secure
  - Up-to-date
  - Reliable
  - …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GSR List
Pushing
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Records
DSR
DSR
Query
Discover
Service
Record
Service
Register
API
Service
Discovery
API
Service
Service
Service
Consumer

Service examples

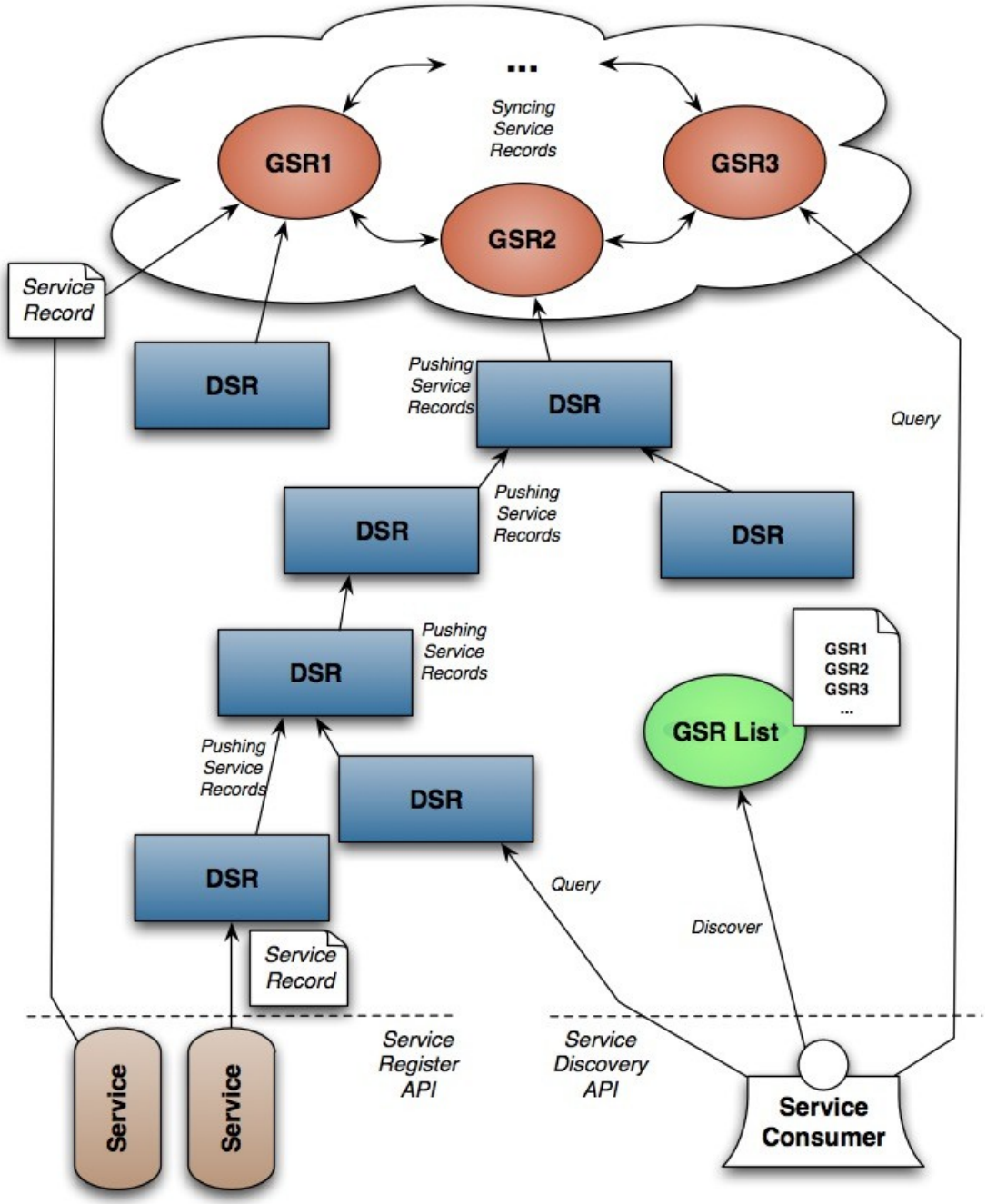
- A-REX
- WMS
- CREAM
- UAS
- OSGA-BES
- SRM
- EMI ES
- ARGUS
- StoRM SE
- VOMS
- SLCS
- STS
- Hydra
- SCAS
- gLExecStoRM SE
- ARC gridftp-job-plugin interface
- ARC gridftp server
- FTS
- DPM
- LFC
- dCache server

Service Consumer examples

- CLI's
  - provided by the partners: ARC, dCache, gLite, Unicore has also different set of command line tools
  - graphical user interfaces
    - portals
    - thick clients
    - etc.
  - libraries (like the arclib)
  - services(!)

Interfaces

- 3 different interfaces
  - Service register interface
  - Service discovery interface
  - Intra-registry (synchronisation) interface
- Need to be…
  - Standardized
  - Lightweight
  - Easy-to-implement and adapt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Federated model

- The DSRs (Domain Service Registries) can be organised into a tree structure following the borders of the federation.
- The registrations (behove to the federation) will be propagated above
- Consumers can prefer “local” results
- Policy decisions could be also propagated signed by a trustworthy federation member.

Internal issues

- Information model
  - Highly based on GLUE2
  - At the beginning as small amount of data as possible (Service type, URL, and some more) – can be extended later
  - Static information (depends on the point of view) – during the lifetime of a service
- Security
  - Rely on ARGUS Service
  - Using XACML profiles

Global Service Registry

- The top level of the hierarchy
- Fully replicated databases
- Also implements the Query interface
- Robust solution for storing and querying information
- Receives reliable registration - just from the DSRs.
- Synchronize using peer-to-peer solution between each other
- Addresses can be known from GSR list

The answers

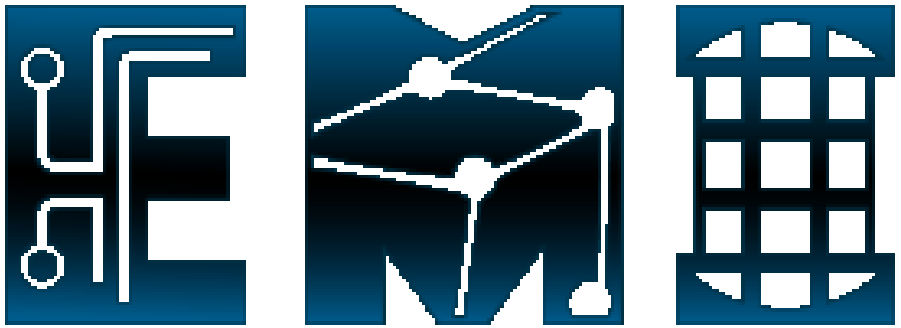
- Discover the existence of services – Providing interface for query service database
- Scalable – Dynamically extendable structure
- Robust – Replicated database
- Federated (!) – supported by design
- Other requirements may appears:
  - Secure – ARGUS, XACML
  - Up-to-date – Aliveness checking
  - Reliable – Controlled information from controlled sources

Status report

- Has a detailed design plan with some open questions, that are also recently discussed.
- Managed to decide some technical issues:
  - Which programming language (Java), database backend (MongoDB), kind of interface (RESTful), or type of message (JSON) will be used.
- Implementation has been started

Status report

- A kind of “Agile” development is in progress
- Short prints are defined
  - 1st: DSR functionalities, working interfaces, integrated security
  - 2nd: Building of internal hierarchical structure
  - 3rd: Implementing peer-to-peer structure, and additional features like aliveness checking, etc.



Thank you!

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