



# GLUE 2 Support in gLite Data Management

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# Overview



- Motivation
- DPM
- StoRM and dCache
- Storage Capacity inconsistencies
- FTS2 and 3
- GFAL 1 and 2
- Conclusions and future work



# Motivation

- Information providers have been reviewed as part of the GLUE 2 validation activities
  - [https://twiki.cern.ch/twiki/bin/view/EGEE/ISproviders#GLUE\\_2\\_0\\_Validation](https://twiki.cern.ch/twiki/bin/view/EGEE/ISproviders#GLUE_2_0_Validation)
- Site validation has pointed out inconsistencies in the storage capacity numbers
  - More detailed analysis of the DPM and StoRM information providers has been carried out (and a bit of dCache too!)



## DPM

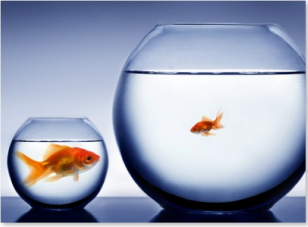
- DPM information provider is called dpm-listspaces
  - Prints information about the space tokens and non reserved space
    - <https://twiki.cern.ch/twiki/bin/view/EGEE/GLUE2Storage#DPM>
  - Missing GLUE 2 attributes are documented here:
    - <https://twiki.cern.ch/twiki/bin/view/EGEE/DPMGLUE2template>
      - Issues are tracked and acknowledged by the DPM development team



# StoRM and dCache



- StoRM information provider has been analysed and bugs have been reported in:
  - <https://twiki.cern.ch/twiki/bin/view/EGEE/StoRMGLUE2template>
- dCache has not been analysed in detail
  - Lack of time and resources
  - However, a lot of GLUE 2 expertise within the dCache team



# Storage Capacity inconsistencies

- [https://twiki.cern.ch/twiki/bin/view/EGEE/GLUE2Storage#Storage\\_Capacity](https://twiki.cern.ch/twiki/bin/view/EGEE/GLUE2Storage#Storage_Capacity)

## Storage Capacity

Name	Service Capacity		Share Capacity		Comments
	Nearline	Online	Nearline	Online	
dCache	Total, Used	Total, Used, Free	Total, Used	Total, Used, Free	Free=Total - Used, numbers always match
StoRM	Reserved=0, Total, Used, Free	Reserved=0, Total, Used, Free	Reserved=0, Total, Used, Free	Reserved=0, Total, Used, Free	Free=Total - Used, numbers always match. Nearline numbers do not match
DPM	-	Total, Used, Free	-	Total, Used, Free, Reserved=Total for space tokens, Reserved=0 for non reserved area	

# Storage Capacity Inconsistencies



- GLUE 2 is different from GLUE 1
  - Developers seem to have applied GLUE 1 concepts to GLUE 2
- InstalledNearline/InstalledOnline are missing
- Non reserved space
  - Missing in dCache and StoRM
    - Or at least non differentiated from reserved space
  - Wrongly calculated in DPM
    - Or at least published numbers are not coherent



- FTS2 service is published in both GLUE 1 and GLUE 2
- Internal BDII queries are only performed in GLUE 1
  - Gets the site name where the SE host belongs to
    - Used for publishing monitoring information in the dashboard transfer UI
    - And to assign a transfer job to a specific channel
  - Gets srm/http/gsiftp SE endpoint to submit a transfer
    - checking if this specific SE supports the protocol used in the transfer job
- On the client side only GLUE 1 is used
  - When no FTS endpoint is specified, gets the first available endpoint that allows the user to submit a transfer job





- FTS3 service is published only in GLUE 2
- Internal BDII queries are in both GLUE 1 and GLUE 2
  - Configurable option
  - Gets the site name where the SE host belongs to
    - Used for publishing monitoring information in the dashboard transfer UI
  - All the other uses cases are handled using GFAL 2
  - FTS3 clients do not support service discovery



# GFAL 1

- Queries in both GLUE 1.3 and GLUE 2.0
  - Using a configuration variable
  - Use cases
    - Gets CE AccessPoint for a given SE
    - Uses AccessControlBaseRule to check if the user is allowed to use an endpoint
    - Gets endpoint for the LFC if it is not specified
    - Gets SAPath
    - Gets SE type (disk, srm\_v1, srm\_v2, gsiftp)
    - Gets supported protocols with their associated port number



## GFAL 2

- Queries only GLUE 1
  - Gets the SRM endpoint
  - To be followed up:
    - Any plans to move to GLUE 2?
    - What about all the other uses cases?



# Conclusions and Future Work

- Get GLUE 2 storage capacity values correctly published
  - Discussions started during summer
    - Mostly reviewing/re-discussing GLUE 2
      - Need for a GLUE 2 usage document?
      - Isn't EGI profile for GLUE 2 enough?
    - Slowly due to summer holidays
  - No clear actions defined so far
- Understand in more detail FTS and GFAL GLUE 2 use
  - Dialogue between Infosys and FTS/GFAL
  - Make sure GLUE 2 offers what it is needed for FTS and GFAL to work → Maybe already the case!

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