


GLUE 2 Open Issues in Storage Information Providers

16th May 2014



Introduction

- The following slides summarise open issues in GLUE 2.0 publication of the different storage information providers
- Castor/EOS is not covered since it doesn't publish GLUE 2.0 yet

How GLUE 2 Open Issues have been tracked so far

	List of Open Actions	Status
dCache	None	Unknown
DPM	https://twiki.cern.ch/twiki/bin/view/EGEE/DP MGLUE2template	Fixed in 1.8.8
StoRM	https://twiki.cern.ch/twiki/bin/view/EGEE/St oRMGLUE2template	Unknown

GLUE2StorageService

	GLUE2ServiceType	GLUE2ServiceCapability
dCache	org.dcache.storage	data.access.flatfiles data.management.storage data.management.transfer data.transfer security.delegation
DPM	DPM (as of 1.8.8) Storage	data.access.flatfiles data.management.replica data.management.storage data.management.transfer data.transfer executionmanagement.reservation security.authentication security.authorization
StoRM	SRM	data.management.storage

GLUE2StorageService

- StoRM and DPM to choose a service type that follows the reverse-DNS prefix syntax
 - See <http://glue20.web.cern.ch/glue20/#b31> for more details
 - We need to communicate this to GLUE WG
- Do we want to align capabilities?
 - I would postpone this discussion for the time being and focus on improving other attributes

GLUE2StorageServiceCapacity

	Type	Total	Used	Free	Reserved	glue-validator	Total (PB)
dCache	Nearline	Yes	Yes	No	No	OK	51583
	Online	Yes	Yes	Yes	No	OK	46525
DPM	Online	Yes	Yes	Yes	No	OK	9M
StoRM	Nearline	Yes	Yes	Yes	0	Error	4566
	Online	Yes	Yes	Yes	0	Error	65131

glue-validator test:

OK if $(\text{used} + \text{free} + \text{reserved}) - 0.5\% \leq \text{total} \leq (\text{used} + \text{free} + \text{reserved}) + 0.5\%$
Error otherwise

Note that only the published attributes are taken into account

GLUE2StorageServiceCapacity

- glue-validator shows coherent numbers among published attributes for DPM and dCache
- However, the totals seem to be too high!
 - See next item in the agenda for storage capacity validation
 - Note that glue-validator implements a test to detect totals higher than 1 billion GB (1000 PB)
- In the case of StoRM, developers already contacted since the numbers are not correct
 - It affects old and new versions

GLUE2StorageShareCapacity

	Type	Total	Used	Free	Reserved	glue-validator	Associated Mapping Policy
dCache	Nearline	Yes	Yes	No	No	Error in 8 sites 71 shares	Yes
	Online	Yes	Yes	Yes	No	OK	
DPM	Online	Yes	Yes	Yes	Yes, Reserved=Total for Space Tokens, 0 for non reserved space	Error in 11 sites 97 shares	Yes
StoRM	Nearline	Yes	Yes	Yes	0	Error in INFN-1 13 shares	No
	Online	Yes	Yes	Yes	0	Error in INFN- BARI 28 shares	

GLUE2StorageShareCapacity

- glue-validator shows errors in all SEs
 - Could it be site misconfigurations?
 - Shall we open GGUS tickets to know more?
- Reserved seems to be used in different ways by the different SEs
 - Feedback from experiments is that reserved is not used by them
 - Probably we don't need to care about this?
- StoRM should publish the mapping policies for the storage shares
 - glue-validator doesn't help here since it misses a sanity check on which objects should be published once a certain object is published. i.e:
 - Endpoint -> access policy
 - Share -> mapping policy
 - In any case, a detailed study has been carried out for StoRM
 - <https://twiki.cern.ch/twiki/bin/view/EGEE/StoRMGLUE2template>
 - Have all the issues reported in this twiki been fixed?

GLUE2StorageAccessProtocol

GLUE2StorageAccessProtocol object describes **all** the protocols that can be used to store or retrieve data.

	dCache	DPM	StoRM
dcap	Yes	-	-
file	Yes	-	Yes
ftp	Yes	-	-
gsidcap	Yes	-	-
gsiftp	Yes	Yes	Yes
http	Yes	-	Yes
https	Yes	-	Yes
nfs	Yes	-	-
rfio	-	Yes	Yes
webdav	-	Yes	-
xrootd	Yes	Yes	Published as 'root'

GLUE2StorageAccessProtocol

- Could we agree on the protocol type names?
 - StoRM publishing root and DPM/dCache publishing xrootd
 - Do they refer to the same protocol?
 - GLUE 2.0 takes into account both
 - Root: File transfer protocol for the ROOT framework
 - Xrootd: xrootd protocol
- What about GLUE2StorageAccessProtocolVersion?
 - Is this important? I haven't checked consistency among different SEs
 - How many versions are out there?
 - I can write a glue-validator probe to check them if you give me some guidelines

GLUE2StorageEndpoint

GLUE2Endpoint may be published for each access protocol that may not require prior negotiation. The InterfaceName must correspond to the access protocol.

	GLUE2EndpointInterfaceName and GLUE2EndpointURL protocol	GLUE2EndpointImplementationName	Associated Access Policy
dCache	dcap - dcap file - file ftp - ftp gsidcap - gsidcap gsiftp - gsiftp http - http https - https nfs - nfs Srm or SRM - httpg xroot - xroot	dCache	Yes
DPM	gsiftp - gsiftp rfio - rfio SRM - httpg webdav - https xroot - xroot	DPM (as of 1.8.8) Not published before	Yes
StoRM	SRM - httpg	StoRM	Yes

GLUE2StorageEndpoint

- Discussion in GLUE WG to define InterfaceName for
 - xrootd
 - webdav
 - Once a decision is taken, info providers need to be updated
- Does InterfaceName need to match AccessProtocol?
 - The same for the versions published by each object?

Status of GLUE 2.0 SE information in the BDII

	Services	Storage Manager	Sites	Endpoints	Sites	Storage Shares
dCache	64	58	43	1078	38	2033
DPM	215	213	192	804	191	2676
StoRM	58	61	47	62	49	732

REBUS

Implementation	Instances	Sites
ARC	2	2
BESTMAN	51	46
CASTOR	20	3
CLASSICSE	48	48
DCACHE	79	56
DPM	214	185
EOS	1	1
STORM	62	50
XROOTD	12	7

Xrootd/webdav GLUE 2 endpoints

	ATLAS endpoints	ATLAS xrootd endpoints	ATLAS webdav endpoints	CMS endpoints	CMS xrootd endpoints	CMS webdav endpoints
dCache	612	54	0	631	52	0
DPM 1.8.8	71	6	15	94	12	18
StoRM	37	0	0	36	0	0

- dCache: what happens with webdav?
- StoRM: what happens with xroot/webdav?
- Do we want to make an effort to publish these endpoints in the IS?

Action items

dCache	Detailed GLUE 2.0 Validation. It seems to be in good shape but there are minor things that could be improved (i.e. Publication of GLUE2EntityCreationTime)
DPM	Define ServiceType DNS like name for GLUE WG
StoRM	Confirm whether open issues reported in twiki are fixed and otherwise produce a new version of the info provider to fix them
	Define ServiceType DNS like name for GLUE WG