

Table of Contents

Storage Services in GLUE 2.....	1
Storage Resource Managers.....	1
Storage Protocols.....	1
Storage Information Providers.....	2
DPM.....	2
Storage Capacity.....	2
GGUS tickets.....	3

Storage Services in GLUE 2

This twiki tracks open issues that need a common agreement among the different storage service developers. In particular:

- SURL in GLUE2EndpointURL? This is what experiments are using
- GLUE2ServiceType: agree on a coherent list of existing storage service types
- GLUE2EndpointInterfaceName and GLUE2StorageAccessProtocol: agree on a list of protocol names
- Capabilities: agree which capabilities should be published per protocol type

Storage Resource Managers

The following table shows the existing storage resource managers published in the BDII:

Name	Published in the BDII	SRM	non-SRM	GLUE2ServiceType
dCache	YES	YES	ftp, gkftp, gsiftp, xrootd, dcap, gsidcap, file, http, https	org.dcache.storage
DPM	YES	YES	xroot, webdav	Storage
StoRM	YES	YES	NO	SRM

Storage Protocols

The following table shows how the existing protocols used by the different storage services are published in the BDII:

Protocol	Published as an endpoint			GLUE2EndpointInterfaceName			GLUE2EndpointURL			Accessible via SRM			GLUE2ServiceType
	dCache	DPM	StoRM	dCache	DPM	StoRM	dCache	DPM	StoRM	dCache	DPM	StoRM	
SRM	YES	YES	YES	SRM	SRM	SRM	httpg	httpg	httpg	-	-	-	data.man data.man
webdav	-	YES	-	-	webdav	-	-	https	-	-	NO	-	-
xroot	YES	YES	NO	xroot	xroot	-	xroot	xroot	-	YES	NO	YES	data.tra
gsiftp	YES	NO	NO	gsiftp	-	-	gsiftp	-	-	YES	YES	YES	data.tra
rfio	-	NO	NO	-	-	-	-	-	-	-	YES	YES	-
http	YES	-	NO	http	-	-	http	-	-	YES	-	YES	data.tra
https	YES	-	NO	https	-	-	https	-	-	YES	-	YES	data.tra
file	YES	-	NO	file	-	-	file	-	-	YES	-	YES	data.tra
dcap	YES	-	-	dcap	-	-	dcap	-	-	YES	-	-	data.tra
gsidcap	YES	-	-	gsidcap	-	-	gsidcap	-	-	YES	-	-	data.tra
ftp	YES	-	-	ftp	-	-	ftp	-	-	YES	-	-	data.tra
gkftp	NA	-	-	NA	-	-	NA	-	-	NA	-	-	NA

- GLUE2StorageAccessProtocol object describes **all** the protocols that can be used to store or retrieve data.
- GLUE2Endpoint may be published for each access protocol that may not require prior negotiation. The InterfaceName must correspond to the access protocol.

Storage Information Providers

This section gives details on how the different storage services publish the storage service related information.

DPM

A pool in DPM is a collection of file systems. File systems can be online, disabled or read-only. Space can be reserved in a pool for a particular VO, which is what it is called `space token`.

For pools: Note that whereas DPM does not consider the unavailable space due to file systems being disabled or read-only in the total space, the information provider always takes this into account. So `total` in the information provider means available and unavailable space in the file systems. On the other hand, `free` in the information provider only refers to available space in the online filesystems.

Command	GLUE 1	GLUE 2
<code>/usr/bin/dpm-listspaces --gip --protocols --basedir home --site my-site-name --glue2</code>	GlueSE GlueSA GlueVOInfo GlueSEAccessProtocol GlueSEControlProtocol	GLUE2StorageService GLUE2StorageServiceCapacity GLUE2StorageEndpoint GLUE2StorageManager GLUE2StorageShare GLUE2StorageShareCapacity GLUE2StorageAccessProtocol GLUE2AccessPolicy

A `GlueSA/GLUE2StorageShare+GLUE2StorageShareCapacity` is published per pool and per space token (reserved space). For the pool, the information that it is published refers to the non reserved space. The following definitions apply for each of them:

Type	<code>GlueSATotalOnlineSize</code> <code>GLUE2StorageShareCapacityTotalSize</code>	<code>GlueSAUsedOnlineSize</code> <code>GLUE2StorageShareCapacityUsedSize</code>	<code>GlueSAFreeOnlineSize</code> <code>GLUE2StorageShareCapacityFreeSize</code>
Non reserved pool space	<code>total1=total size of the pool - reserved space - unavailable space (due to read-only or disabled file systems)</code>	<code>total1 - free</code>	<code>free space in the online systems - free space in reserved space</code>
Space tokens	size of the reservation	size of the used part of the reservation	free part of the reservation

The `GlueSE/GLUE2StorageServiceCapacity` contains the aggregated numbers per pool:

Type	<code>GlueSETotalOnlineSize/GlueSESizeTotal</code> <code>GLUE2StorageServiceCapacityTotalSize</code>	<code>GlueSEUsedOnlineSize</code> <code>GLUE2StorageServiceCapacityUsedSize</code>	<code>GlueSESizeFree</code> <code>GLUE2StorageServiceCapacityFreeSize</code>
Aggregated pools	the total size of all pools defined in DPM	Sum per pool of: <code>total - reserved - free</code>	<code>total - used</code>

Note that no reserved space is published at service level.

Note that for DPM only online capacity is published. Nearline capacity is always 0.

Note that DPM is rounding the published numbers removing the fractional part. Calculations are done internally in bytes and numbers are transformed to Gigabytes (power of 10) when published in the BDII. Anything less than 1GB is published as 0.

Storage Capacity

Name	Service Capacity	Share Capacity	Comments

GLUE2Storage < EGEE < TWiki

	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	

dCache and StoRM do not seem to publish non reserved area (to be confirmed by developers).

GGUS tickets

The following GGUS tickets have been opened to track capacity number inconsistencies. Developers have given more details or explanations on how things are calculated within them.

Name	GGUS ticket	Description
dCache	GGUS:98854	How dCache info provider works, explanation why <code>Free</code> is not published
dCache	GGUS:99750	Explanations on how to get storage capacity numbers from dCache
DPM	GGUS:98853	Ticket tracking incorrect numbers for unreserved space
DPM	GGUS:93097	General ticket tracking glue-validator errors for DPM
DPM	GGUS:94264	Request to publish gridftp endpoints
StoRM	GGUS:92217	General ticket tracking glue-validator errors for StoRM
StoRM	GGUS:94268	Request to publish gridftp endpoints
StoRM	GGUS:101086	How to build the gsift URL of a storage element?

| StoRM | [GGUS:90865](#) | Discrepancy between BDII and SRM sizes |

This topic: EGEE > GLUE2Storage

Topic revision: r17 - 2014-05-13 - MariaALANDESPRADILLO



Copyright &© by the contributing authors. All material on this collaboration platform is the property of the contributing authors.

Ideas, requests, problems regarding TWiki? Ask a support question or Send feedback