



Protocol zoo – a reminder

(based on Wahid's slides from last time)



TEG recommendation reminder

- Maintain SRM at archive sites
- Experiments, middleware experts and sites should agree on alternatives to be considered for testing and deployment, targeting not the full SRM functionality but the subset detailed here, determined by its actual usage.
 - ... recommend a small working group be formed, reporting to the GDB, to evaluate alternatives as they emerge
- Develop future interfaces:
 - ... different approaches to integrate cloud-based storage resources need to be investigated ...

Aims

- Reduce cost of running storage
 - Reduce the number of services required
 - Remove obligation to run SRM for disk
 - By identifying required functions and implementing them through existing services
 - Ultimately, facilitate use of non-HEP-specific solutions, inc cloud

Development Areas (from previous pre-GDB)

Needed by?	Issue	Solution
ATLAS/ LHCb	Reporting of space used in space tokens.	See previous discussion. Via json summary or through xrootd/gsiftp/http
ATLAS/ LHCb	Targeting upload to space token.	Just use namespace? Work ongoing.
ATLAS/LHCb	Deletion	SRM offers efficient bulk methods. Are straight deletes via other protocols sufficient?
LHCb (ATLAS)	Surl->Turl	“Require a redirecting protocol and SURL = Turl for sites that want no SRM”. Xrootd & HTTP can redirect, gsiftp is also capable (but not always configured).
Any?	Checksum check, adler32 (& md5?)	Gfal2 & FTS can retrieve checksums from gsiftp and http. Is the SE support there now?
All?	Pure gridFTP on different storage types	Requires redirection support or gateways. dCache & DPM (at least) have redirection. EOS uses a gateway.

- Backup

TEG

	Is this feature used by ...				Tier	SRM function ²
	Atlas	CMS	LHCb	FTS only		
Transfer Management						
Upload / download a complete file	Yes	Yes	Yes	No	All	srmPrepareToPut/Get//Put/GetDone
Manage transfers.	Yes	Yes	Yes	Yes	T1/2	srmAbort/Suspend/ResumeRequest
Balance over multiple transfer servers.	Yes	Yes	Yes	Yes	T1/2	srmPrepareToGet ³
Manage third-party copy	Yes	Yes	Yes	Yes ⁵	T1/2	
Negotiating a transport protocol	No	No	No			srmGetTransferProtocols
Namespace Interaction						
Querying information about a file (stat)	No	No	Yes ¹	Yes ⁵	T1/2	srmLs
Upload data integrity information (chksums)	No	No	No	No	T1/2	
Check integrity information	Yes	Yes	Yes	Yes		srmLs
Creating/Deleting data and directories	Yes	Yes	Yes ¹	Yes ¹	All	srmMkdir srmRmdir srmRm srmMv
Changing ownership, perms and ACLs	No	No	No	No	-	srmSet/Check/GetPermission
Storage Capacity Management						
Query used capacity (like df)	Yes	No	Yes	No	T1/2	srmGetSpaceMetaData/Tokens
Create/remove reservations; assign characteristics	No	No	No	No	-	srmReserve/Update/ReleaseSpace
Targeting uploads to specific reservation	Yes	Yes	Yes	No	T1/2	srmPrepareToPut
Moving files between reservations	No	No	Yes	No	T1/2	srmChangeSpaceForFiles
Server Identification						
Test service availability and information	Yes	Yes	No	No		srmPing

- Somewhat simplified and removed those only relevant for Archive/T1
- A couple of observations:
 - Not that much is needed – e.g. space management is only querying and not even that for CMS