



SRM v2.2 status

- What is SRM v2.2 ?
- Status of implementations
- Open issues
- Schedule

Critical features for WLCG

- Result of WLCG Baseline Services Working Group
 - <http://cern.ch/lcg/PEB/BS>
- Features from version 1.1 + critical subset of version 2.1
 - File types
 - Space reservation
 - Permission functions
 - Directory functions
 - Data transfer control functions
 - Relative paths
 - Query supported protocols
- Originally planned to be available by WLCG Service Challenge 4
 - Relevant implementations were incomplete or incompatible
 - Use cases have evolved since
- Details in presentation for LCG Internal Review of Services, June 9
 - <http://agenda.cern.ch/fullAgenda.php?ida=a062385>

- Mandated by WLCG Management Board after Mumbai workshop
- Designed during May 22-23 workshop at FNAL
 - Some notions backported from SRM v3, others added for WLCG
- Summarizes agreed client usage and server behavior for the SRM v2.2 implementations used by WLCG applications
 - Servers can ignore non-WLCG use cases for the time being
- Clients
 - FTS, GFAL, lcg-utils
 - No direct usage of SRM by experiments
- Servers
 - CASTOR, dCache, DPM
 - Berkeley SRM
 - StoRM

- Stick with SRM v3 terminology, but with a WLCG understanding
 - TRetentionPolicy {REPLICA, CUSTODIAL}
 - OUTPUT is not used
 - TAccessLatency {ONLINE, NEARLINE}
 - OFFLINE is not used
- Tape-resident with system-managed disk cache
 - Tape1Disk0 == CUSTODIAL + NEARLINE
- Tape-resident with guaranteed copy on disk
 - Tape1Disk1 == CUSTODIAL + ONLINE
- Disk-resident, user-managed
 - Tape0Disk1 == REPLICA + ONLINE
- All WLCG files (SURLs) are permanent
 - Files can only be removed by the user

- A storage class instance is implemented as an SRM space
 - Created through srmReserveSpace or out-of-band by SE admin
 - These spaces are static, i.e. set up in advance by VO admin
 - Typically group-writable
 - Dynamic user spaces will come later
 - An SE usually will have multiple instances of any supported storage class
 - Different spaces for different VOs
 - Different spaces for different groups or different data types within a VO

- Clients will refer to spaces through space tokens or user descriptions
 - Explicit API and CLI options will be available
 - Else the default space for the VO will be used
 - To be supplied to srmPrepareToPut and srmCopy only
 - srmPrepareToGet does not need it in minimal WLCG model
 - A file can only be in a single space at a time

SRM v2.2 / v3 meeting report

- SRM v2.2 meeting Aug. 29
 - <http://agenda.cern.ch/fullAgenda.php?ida=a063257>
 - Status reports and discussions

- SRM v3 meeting Aug. 30 – Sep. 1
 - <http://agenda.cern.ch/fullAgenda.php?ida=a062357>
 - Many discussions also very relevant to v2.2 (v2.3)
 - v3 functionality observed to be moving toward v2.2

- Details in WLCG Management Board presentation of Sep. 12
 - <http://agenda.cern.ch/fullAgenda.php?ida=a063265>

- CASTOR
 - No significant development remaining for minimal WLCG model
- dCache
 - Space reservation alpha version ready
 - Directory and data transfer functions implemented
 - srmBringOnline in October
- DPM
 - All methods for minimal WLCG model essentially implemented
 - Pending issues, e.g. DB schema upgrade procedure
- Berkeley SRM
 - Almost all methods for minimal WLCG model implemented
- StoRM
 - All methods for minimal WLCG model expected around end September

- Space ownership and ACLs vs. VOMS proxy contents
 - Not needed in the short term
 - Only production managers must be distinguished from ordinary users
 - Each implementation can do that based on DN for the time being
 - DPM could already take agreed VOMS Role into account
 - v3/v2.3 use subspaces for dynamic reservation by users
- ACLs on files and directories
 - Similar issues and timescales
- srmLs output format
 - Paths instead of SURLs
- File lifetimes
 - DB schema could already foresee v3/v2.3 enhancements

- FTS
 - Use space token or description, if supplied, on Put and Copy
 - srmLs only on single files
 - bringOnline for pre-staging early next year
 - ACL propagation (also for leading directory creation) to be decided
 - Best effort support for v1.1
 - WLCG v2.2 support to be in release end of October

- GFAL/lcg-utils
 - Space token to be provided in explicit call to set the context
 - Not as extra arguments to the POSIX-like interface
 - ACL propagation to be decided
 - WLCG v2.2 support to be available end of October



Berkeley SRM-Tester status

- Test client independent of any server implementation
- Basic functionality tests
- Advanced tests provoke failed requests
 - Check the server's subsequent behavior
- Basic and advanced interoperability tests with srmCopy
- Results published on web pages
 - <http://sdm.lbl.gov/srm-tester/>
- Stress tests implementation dependent on extra funding
 - Work part of GGF-GIN project



Storage Classes working group

- Study deployment configurations of storage classes
 - Per SRM back-end
 - How to assign pools to the various storage classes needed by a VO
 - How to configure (subsets of) pools for LAN or WAN access
 - Try to devise common configurations for VOs, per site
- Tape1Disk1 implementation is not evident
 - The other two are standard
- Allowed transitions between classes are not evident
 - Want to avoid making physical copies
 - Explicit stageout Tape0 → Tape1 awkward to implement
 - Disallow?
- Space reservation refers to the pool from which the data is used
 - Data typically accessed from LAN only
 - WAN transfer pool takes up some HW, but is not exposed

- xrootd
 - BaBar have important use case for file update \leftrightarrow immutable files
 - File can change as long as not in catalog
 - Want prepareToPut with delay option to allow for updates etc.
 - Tested with modified Berkeley SRM
- Quotas
 - Still desired for v3/v2.3
 - Complementary to spaces
- httpg vs. https
 - httpg always delegates proxy, while only needed for srmCopy
 - Separate delegation service reduces security overhead
 - https is standard
 - Can use alternative implementations, less code to maintain

GLUE schema changes

- New schema for SE to reflect properties of SRM v2.2 and higher
 - Storage Area → space
 - Access Policy info per SA per VO
 - Foresees quotas
 - Enhances Access Protocol info
 - Removes obsolete/unused notions
- Submitted to GLUE schema working group

- Settle open issues in phone conferences + mailing lists
 - ACL semantics, ...
 - Avoid non-trivial changes to WSDL/spec for the time being
 - Collaborate with Storage Classes WG
- Continuous interoperability testing
 - Berkeley SRM-Tester
 - Test suite of Jiri Mencak (RAL) continued by Flavia Donno (CERN)
- Deploy v2.2 services on a few major sites by Nov. 1
 - Allow for large-scale stress tests by the VOs
 - A Service Challenge week in Jan./Feb. would be desirable
- Have v2.2 deployed on all relevant WLCG sites by spring
 - Keep v1.1 service for legacy applications
 - Define plan for enhancements beyond minimal WLCG model