



Enabling Grids for E-scienceE

Update from the SAM Team September, 2008

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- **Summary:**
 - APEL-pub test is finally implemented (checks that sites are correctly publishing accounting information)
 - SRMv2 tests now in Production (but with alarming turned off)
 - In the pipeline, separate testing of:
 - Classic SE (FTP only)
 - SRMv1
 - SRMv2
 - Steps taken to stabilize SAM service:
 - New SAM team member with industry experience
 - Lemon sensors to detect anomalies
 - Clear separation of Test, Validation & Production infrastructures
 - New DB tables for correcting erroneous test results resulting from outages in central services (used by GridView)

- **Close collaboration between:**
 - GOCDB
 - new APEL service defined & associated with CEs
 - APEL developers
 - testing in Validation, followed by publishing in SAM production infrastructure
 - SAM team
 - Integrate new APEL service in SAM database
 - masking alarms so that there's only one per site
 - APEL-pub & APEL-sync tests, but only APEL-pub is critical
 - 271 sites OK; 75 sites currently flagged as not publishing correctly (warning > 7 days no data; error > 31 days no data)
 - COD & sites now have a better idea of who the culprits are
 - Sites can request help from APEL team to sort things out

- **Current situation in EGEE:**
 - ~63 Classic SEs
 - ~278 SRMv1s
 - ~296 SRMv2s

Nb. inconsistencies and variety of fields in BDII make identifying service types correctly non-trivial
- **Site availability calculations currently only take first two into account, and yet SRMv2s are predominant**
- **SAM team have developed SRMv2-specific probes**
 - Used CMS probes as starting point, but completely rewritten
 - All 7 tests are critical so that history can be viewed in SAM portal, but COD alarms are currently suppressed, and site availability figures are not impacted

- **SRMv2-get-SURLs**
 - get full SRM endpoints and space areas (VO dependent) from BDII
- **SRMv2-ls-dir**
 - check if we can list VO's top level space area(s) in SRM
- **SRMv2-put**
 - copy a local file to the SRM into default space area(s)
- **SRMv2-ls**
 - list (previously copied) file(s) on the SRM
- **SRMv2-gt**
 - get Transport URLs for the file(s) copied to storage
- **SRMv2-get**
 - copy given remote file(s) from SRM to local file(s)
- **SRMv2-del**
 - delete given file(s) from SRM

- **LFC-ping**
 - New test added to LFC test suite. This test is not currently critical, but should become so at some later stage
 - pings LFC to get its version. Uses 'lfc-ping', even though this command is unnecessarily complex (authentication and authorization performed, and virtual ID for the user is created).

- **Three different tests for Storage Elements**
 - Classic SE (might never see light of day if support is dropped)
 - SRMv1 (in CVS and under testing)
 - SRMv2
- **Integration of results in GridView availability calculations**
 - AND of different Storage Classes
 - OR of multiple instances in each storage class
- **Differentiation between Central and Local LFCs**
 - Don't try to write to RO LFCs
- **Use of Message Bus & WLCG Probe formats**
 - Preliminary work has already started

- **Post mortems after each outage to take corrective actions**
 - Database; Web-publishing; Submission framework, Portal
- **Most outages are due to operational errors during h/w or s/w updates:**
 - New SAM team member with industry experience hired
 - Wojciech Lapka started 1-Nov-2008
 - Check-lists being developed to ensure no steps are missed
 - Lemon sensors developed to detect operational anomalies
 - Check that test results are being published to DB
 - Alert if number of alarms is higher than normal thresholds
- **Clear separation of SAM Test, Validation & Production infrastructures**
 - All new releases are first tested in Validation

- **If there's an outage of one of the SAM components, site availability figures should not be negatively impacted**
 - Test data should not be deleted, but it can be masked
 - Tables used to define start & end time, services affected
 - Original data is saved, problem data is corrected as necessary
 - E.g. failure of central LFC used by replication tests -> site SRM tests failed
- **Outages are published in SAM unavailability Twiki**
- **GridView recalculates availability once masks have been created**

- **Please read deliverable MSA1.5 produced by the Operations Automation Team to see where we're heading in terms of monitoring, combining the best of SAM and NAGIOS:**
 - <https://edms.cern.ch/document/927171>