Roadmap towards CREAM certification

EGEE-JRA1 All-hands meeting
CERN 24-26 October 2007

Luigi Zangrando – INFN Padova - ITALY

www.eu-egee.org

Information Society and Media

acceptance tests: passed

- **In July/August 2007 CREAM passed the acceptance tests defined by the EGEE project**
  - performance and reliability tests

- **Test criteria:**
  - performance test:
    - 5000 simultaneous jobs per CE node (scheduled + running)
    - job submission rate of 10K jobs/day
    - 50 different users submitting jobs to a single CREAM-CE node
  - reliability test:
    - job failure rates in normal operations due to the CE <0.5%
    - job failure due to restart of CE services or reboot <0.5%
    - 5 days unattended running with no significant performance degradation

acceptance tests: passed

- **Tests performed at CNAF**
- **Test results**
  - >8 days long test
  - 90K jobs submitted via gLite WMS
  - no error due to cream
  - no performance degradation observed

- **The EGEE TCG decided to increase the effort on CREAM to make it production ready on SL4 with VTD 1.6**

- **the roadmap for bringing CREAM ready to certification is defined by:**
  - CE check list
  - 2 milestones: October 31 and December 12

CE Check list

- CE check list defined by SA3
- set of activities to be completed for making cream ready for the certification process
- CE check list and current status available at https://twiki.cern.ch/twiki/bin/view/EGEE/CECheckList
- **5 activities:**
  - installation
  - configuration
  - documents
  - functionality
  - operations
- every activity is defined by a set of tasks with a well specified priority
- several tasks already completed (some others still open)

CE Check list: ongoing tasks

- **configuration activity:**
  - based on ETICS builds on SL4 with VDT-1.6
  - ig-YAIM (yaim customized by INFN) configuration scripts are available
    - used for testing and development environment
  - we are finalizing the integration with the official glite-YAIM

- **functionality activity:**
  - job submission through Condor-G
    - the integration of CREAM and Condor-G already started;
    - some simple jobs have been correctly submitted to CREAM
      - problem with output sandbox transferring;
    - basic Condor-G->CREAM operations implemented (to be tested);
    - CEMon integration for async notification of job status changes
  - Batch system support
    - CREAM relies on blah capability
      - Torque and LSF fully supported
      - Condor and SGE later (lower priority)

CE Check list: ongoing tasks

- **functionality activity:**
  - Proxy renewal
    - already implemented in CREAM
    - works well under light load
    - observed problems with moderate CREAM loads
      - in particular some proxy renewal requests can time-out and so the job will die.
    - ICE provides a mechanism for retrying the execution of all operations previously failed
      - not sufficient and sometimes the jobs fail since the proxy is expired
    - improvement of the proxy renewal performance needed
    - a more efficient proxy renewal mechanism between ICE and CREAM requires code redesign both in ICE and CREAM.
    - CREAM-side we are replacing the existing CREAM back-end with a more scalable and efficient one based on relational DB (postgres)
  - Accounting system, APEL has to work
    - testing for LSF done
    - pbs to be tested
    - found a bug in APEL #30041, but in any case the records are accounted

CE Check list: ongoing tasks

- **operation activity:**
  - Verify that no serious memory leaks are present
    - CREAM is memory leak free
      - Condor Java classAd library fixed
    - probable memory leaks in globus and gridsite libraries affect ICE
      - more debug on this issue is needed
    - temporary workaround is to implement the “harakiri workaround” (analogous to the “suicidal patch” used in WMProxy)
    - ICE memory usage reduction done (not a leak)
      - job cache optimized
  - All services should be up after rebooting, and less than 0.5% jobs lost
    - still failing the first connection after start-up #22437
      - problem with the first VOMS validation
    - waiting for feed-back from MSWG
  - SAM monitoring integration
    - task started
    - SAM scripts for CREAM easy to do it.
    - waiting for the CREAM glite-YAIM procedure

CREAM: what is ready today

- **The Development of CREAM:** expected basic functionality implemented
  - job submission through WMS and CLI
  - security and VOMS supported
  - batch systems supported: LSF & torque through BLAH
  - support MPI
  - support stdout and stderr monitoring
  - support passing parameters to the batch systems
- **The CREAM installation and configuration is almost ready**
  - Based on ETICS builds on SL4 with VDT-1.6
  - *ig-yaim installation scripts are available*
  - *almost ready for integration with official glite-yaim*
  - metapackage ready
  - clean up pool accounts for dynamic mapping
  - clean up obsolete and temporary files, specially the files under the home directories of pool accounts
  - log file rotation
- **Documentation: preliminary version exists**
  - wiki page: http://grid.pd.infn.it/cream
  - user and installation guides and release notes available at wiki page
  - man pages in rpms

milestone: 31 Oct 2007

- Information providers and accounting working
- Full support for proxy renewal
- Fix bug on first connection to CREAM falling after start-up
- ICE harakiri workaround
- Basic job submission through Condor-G
- Verify the possibility to publish VO tags and other runtime info (static and dynamic) through BDII
- Audit trace management
- Finalize glite-yaim installation and configuration
  - deploy and test at more sites
- CREAM documentation updated

- → **Ready for testing at more sites**

milestone: 12 Dec 2007

- Job submission through Condor-G tested at a reasonable scale
- Integration with SAM monitoring (SA3 CERN)
- Proper solution of ICE memory leak (if possible)
- Support for Condor and SGE in BLAH
- Verify MPI support, passing parameters to LRMS and stderr/out monitoring
- Finalize documentation for users and site managers

- → **Ready for certification**