



Enabling Grids for E-science

# CREAM & CEMon

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- **This talk is not a status report on CREAM and CEMon**
- **Instead it is a report about issues to be addressed and tasks to be done**
  - Particular focus on the issues coming from other software components
- **ICE discussed in another talk**
- **CREAM has been released in production just recently**
  - Very few feedbacks for the time being
  - For sure we will have to consider new issues soon, when there is more experience by users/admins
  - → Our workplan is likely going to change soon

- **CREAM and CEMon were using gJAF**
  - Not supported anymore by the security cluster
- **First step: [CREAM, CEMon] Inclusion of gJAF code within CE software and its maintenance (task #7745)**
  - Done in CVS: will be released with patch #2552
  - Removed dependency from security.authorization-framework
- **Second step: [CREAM, CEMon] Move to new AuthZ Service (task #7746)**
  - When the new AuthZ service is ready, of course
  - Dependency on task #7718 (Authorization Service 1.0 Release)
- **“There is a clear plan, with agreed timelines for implementation, for migrating of CREAM away from gJAF”**
  - Among the criteria to be met for replacing the LCG-CE by the CREAM CE (see Nick Thackray’s mail)

- **Issues/questions concerning the integration of new AuthZ service:**
  - No clear understanding yet about what we should do to migrate to the new AuthZ service
  - Besides the development, what about the deployment ?
    - Something to install on the CREAM CE node ?
  - On the CREAM CE node there is also glexec and gridftpd
    - They should migrate to the new AuthZ service as well
    - We don't have to migrate all together, right ?
  - While supporting the new AuthZ service, we will have to keep maintaining the current AuthZ mechanisms
    - CEMon is also part of VDT and it is deployed in OSG
      - *Unlikely that OSG is going to use the new AuthZ service, at least in the beginning → we will have to keep maintaining the current AuthZ solution*
    - We want to keep supporting small communities willing to use CREAM and which are not ready yet to deploy the new AuthZ service
      - *Will also glexec and gridftpd keep supporting the current lcas/lcmaps based mechanisms ?*

- **CREAM interacts with the underlying batch system via BLAH**
- **Approach used in BLAH for proxy renewal so far**
  - BPRserver process running on the WN for each job
  - BPRclient process on the CE contacts the correct BPRserver process on the job's WN
    - Trying all ports in a small configurable range
    - → Needed opening a port range on the WN
- **This solution was considered not acceptable for deployment**
- **The TMB decided, as intermediate short term solution, to copy the proxy renewal approach used in the LCG-CE**
  - Proxy copied on the WN by the jobwrapper from the CE (via gridftp)
  - Task #8176: [CREAM, BLAH] Implement short term solution for proxy renewal
  - Done in CVS: will be released with patch #2552
- **Proxy renewal solution for the medium/long term**
  - On-going discussions but not conclusions/decisions yet
  - See Paolo's talk

- **CREAM and CEMon are still using the VOMSvalidator, provided by security.util-java**
  - Affected by several bugs:
    - #22436: Voms truststore accepts only \*.pem file
      - *Workaround in yaim-cream-ce to cope with this issue*
    - #22437: Problems with voms validation at tomcat startup
    - #9577: VOMSValidator throws exception if directory /etc/grid-security/vomsdir/ does not exist
- **voms-api-java 1.8 supposed to fix these problems**
- **Task #7744: [CREAM, CEMon] Porting to VOMS 1.8 Java API**
- **However it looks like that also trustmanager and delegation should move to voms-api-java 1.8**
  - Some coordination needed

- **CREAM and CEMon use the trustmanager to manage the AuthN**
- **Affected by the following problems (assigned to Joni):**
  - Bug #17046: Trustmanager does not notice CA changes
  - Bug #18732: trustmanager only checks \*.0 and \*.r0 CAs and CRLs

- **We are using the delegation service to delegate proxies to the CREAM CE**
- **Affected by the following problems (all assigned to Akos):**
  - Bug #24952: Problems obtaining the WSDL from the CREAMDelegation service
    - As workaround we had to copy (and fix) the relevant delegation code in the CREAM one
  - Bug #33730: new server side method to purge expired Delegations
  - Bug #33728: problem with DB Connection in GrDPStorageDatabase
    - We had to implement a workaround in our code
  - Bug #35547: Not support in gLite code for limited proxies
    - As a workaround, proxies are limited by BLAH
  - Bug #19602: cannot handle lifetime parameter in java client
    - Always 12 hours
    - Submissions to CREAM using the Java client are affected by this problem



- **Task #7743: [CREAM] Better integration between CREAM and LB**
  - Discussed for the first time at Rome meeting
  - CREAM able to log information to LB
    - Enhance LB events with further information
  - Use of LB tools to monitor CREAM jobs
    - Also for the non WMS-jobs (i.e. the ones submitted directly to CREAM)
  - Depends on task #7638 ([LB] Support native CREAM jobs)
- **As first step CESNET people asked details about CREAM job states: done**
- **We are then supposed to integrate the LB logging calls on CREAM and help with testing**

- **Task #7440: Support for submissions of multiple jobs by the WMS to a CREAM CE with a single call**
  - E.g. if in the bulk matchmaking of a job collection n sub-jobs got matched to a certain CREAM CE, these n sub-jobs should be submitted all together to that CREAM CE
  - CREAM is basically already able to manage such scenario
  - Still to do (and discuss) the modifications needed on the WMS
- **New development mode for the job wrapper**
  - CREAM jw is generated on the CE node (by CREAM)
  - LCG-CE jw is generated on the WMS node (by an helper of WM)
  - These job wrappers have many common parts
  - Not good and dangerous to have duplicated code
  - → [task #7741] [CREAM] CREAM job wrapper refactoring, in order to have common code for CREAM and LCG-CE job wrapper
  - Some preliminary discussions, but not too much work done so far

- **Condor must be able to submit to Condor**
  - One of the requirements to be fulfilled before phasing out the LCG-CE
- **Some work already done in the past with an “old” CREAM implementation**
  - Need to adapt it to new CREAM implementation
  - Not backwards compatible changes were needed
- **Being done by the Condor team**
- **On our side**
  - Provided updated documentation to Condor team
  - Offered availability of a CREAM CE machine for testing
  - Offered support
- **CMS (Sanjay Padhi) is also going to test this stuff**
  - They want to submit Condor Glideins to CREAM

- **CREAM-BES related activities done so far in the domain of the OMII-EU project**
  - At that time the BES specification was still work in progress
  - BES support done on an old CREAM implementation
- **Work in progress to finalize BES support in the current CREAM implementation**
  - Task #7739: [CREAM] BES and JSDL v. 1.0 support
- **Actually not working at high priority on this task, since the relevant person is also involved in ICE development (which is more urgent)**
- **Also because both the BES and JSDL specifications lack some functionality needed for production use**
  - There has been recently a meeting at CERN between representatives of gLite, UNICORE and Nordugrid to discuss these limitations, and propose extensions to BES/JSDL to address the most compelling limitations
  - <http://indico.cern.ch/conferenceDisplay.py?confId=38455>
  - This activity has just started, and will require some time to accomplish the first results

- **Task #7742: Support for High availability/scalable CE in order to support a pool of CREAM CE machines seen as a single CREAM**
  - CREAM CE front end and pool of CREAM machines doing the work
  - Main needed functionality already in place
    - Multiple CREAM CEs sharing the same backend (same DB)
    - E.g. a job can be submitted to a CREAM CE, and can then be cancelled on another CE
  - Still issues to address
  - Going to prepare a proposal to discuss at the TMB
    - Which assumptions can be done ?
- **Task #7747: CEMon backend refactoring**
  - We think that the current JNDI backend has problems and it is difficult to maintain
  - We would like to move to a RDBMS based backend as done for CREAM
  - Issue: CEMon is also used in OSG, and it looks like they don't like too much this approach
    - To be further discussed

- **[task #7800] [CEMon] CEMon CLI needed**
  - Besides the API
  - Request coming from some guys in OSG
  - Done in CVS: will be released with patch #2552
  - RPMs already made available to OSG
- **[task #7801] [CREAM, CEMon] IPv6 compliance of CREAM and CEMon C++ clients**
  - Basically fixing the bugs posted by Mario Reale
  - Still to do