WMS & CE
Metrics and performance

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Criteria

- At MB of 6th March agreed criteria for acceptance testing of gLite WMS and gLite CE:

gLite WMS criteria

- A single WMS machine should demonstrate submission rates of at least 10K jobs/day sustained over 5 days, during which time the WMS services including the L&B should not need to be restarted. This performance level should be reachable with both bulk and single job submission.
  - During this 5 day test the performance must not degrade significantly due to filling of internal queues, memory consumption, etc. i.e. the submission rate on day 5 should be the same as that on day 1.
- Proxy renewal must work at the 98% level: i.e. <2% of jobs should fail due to proxy renewal problems (the real failure rate should be less because jobs may be retried).
- The number of stale jobs after 5 days must be <1%.
- The L&B data and job states must be verified:
  - After a reasonable time after submission has ended, there should be no jobs in "transient" or "cancelled" states
  - If jobs are very short no jobs should stay in "running" state for more than a few hours
  - After proxy expires all jobs must be in a final state (Done-Success or Aborted)

- For verifying these criteria the test suite written by Andrea and currently used by Simone and Andrea will be taken as the baseline.

WMS status

- 2 weeks ago achieved:
  - 15,000 jobs per day for 7 days – 320 jobs (0.3%) did not run
    - These 320 were later restarted and succeeded – still should fix the underlying issue
    - The restart can be automated
    - All jobs in final states
  - Stress test is not yet complete – do not yet know the limit of scalability (30k jobs per day?)
  - Proxy renewal is working
  - L&B can scale much higher than WMS – not a limiting factor
  - N.B. to achieve the goals, DAG-based collections were removed and a new collection mechanism introduced
- WMS (3.1) now in standard certification process
  - Meanwhile gLite WMS nodes at CERN are updated to this version for production use
  - Next release with this version will allow full deployment and replacement of old LCG-RB

gLite CE criteria

- **Performance:**
  - 2007 dress rehearsals:
    - 5000 simultaneous jobs per CE node.
    - 50 user/role/submission node combinations (Condor_C instances) per CE node
  - End 2007:
    - 5000 simultaneous jobs per CE node (assuming same machine as 2007, but expect this to improve)
    - 1 CE node should support an unlimited number of user/role/submission node combinations, from at least 10 VOs, up to the limit on the number of jobs. (might be achieved with 1 Condor_C per VO with user switching done by glexec in blah)
- **Reliability:**
  - Job failure rates due to CE in normal operation: < 0.5%; Job failures due to restart of CE services or CE reboot <0.5%.
  - 2007 dress rehearsals:
    - 5 days unattended running with performance on day 5 equivalent to that on day 1
  - End 2007:
    - 1 month unattended running without performance degradation

CE Status

- **Current status of gLite CE**
    - Close to 100% success of job submission – after resolving a number of timing issues with Condor
    - Submissions of 6000 jobs to a CE (max ~3000 at any time)
    - Do not know scaling of Condor-C instances yet
        - Version with Condor-C instance per VO being set up – not tested yet
    - Several Condor issues were found – not yet clear on a timescale for achieving the criteria

- **Fallback proposal**
    - Keep the LCG-CE "as-is" - there is no effort to port to Sl4 (which implies GT4 and potentially many issues)
    - Deploy either on SL3 nodes (or SL4 with Xen/SL3)

- **Should set up a CREAM instance in parallel and subject it to the same testing procedure**