

Initial response to the Report of the CASTOR Review

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The Castor team is most appreciative of the considerable effort invested by the review team and is grateful for the recommendations which we believe help us to focus our priorities in order to meet the requirements of the experiments, in terms of function, reliability and transparency.

Our initial responses to the recommendations of the review are listed below; we believe that there will be progress in all areas by the time of the proposed delta review.

1. *The CASTOR-2 architecture should continue to allow a pluggable scheduler without enforcing any strong binding to LSF, unless and until clear positive results about LSF scaling are obtained.*
Accepted. Work to establish the scalability of the LSF plug-in is a priority for the development team. We expect to have clear results about LSF scaling by end-August.
2. *If xrootd is to be supported by CASTOR-2 as an internal protocol, the development, integration and support model must be agreed with xrootd developers.*
Noted. The future development, integration and support model will be discussed with experiments, the xrootd developers and the relevant management structures once we have results from the tests of the proposed xrootd interface to CASTOR2
3. *Whilst it is clearly too early to claim that the software and the software process are mature the committee is happy to endorse the process and technologies adopted which clearly compare favourably to those in use in other software projects in the laboratory and elsewhere.*
The CASTOR team is grateful for this endorsement.
4. *Consideration should be given to use of new configuration management and build tools in order to better automate the release process and to facilitate support of different platforms.*
Accepted. A review of the imake build process is underway and a more modular system will be in place by end-September; integration with ETICS procedures will follow, perhaps by year end. Support for different platforms will also depend on the extent of the code modifications that may be required—in any case, support for additional platforms would be limited to the client.

5. *The new procedure of installing new versions of the CASTOR client library, libshift, under the LCG External Library Service is meeting a strong requirement from the LHC experiments and should continue in the future.*
Accepted.
6. *Pursuing common source code management for rfio and the nameserver with the LCG/DPM project seems to be highly desirable.*
Accepted. Progress will depend on the resources and priorities for both the CASTOR and DPM teams. We note that an integration of the rfio code for DPM and CASTOR is underway.
7. *The committee recommends having adequate dedicated hardware, possibly using Oracle certified hardware, to ensure long-term support from Oracle.*
Noted. More reliable hardware will become available from September. The cost implications of using Oracle certified hardware will be reviewed.
8. *The project should seriously consider that ORACLE tuning be decoupled from storage system operations so that the ORACLE DBA's can begin their optimization work outside of production systems. This seems to require a significant investment, namely the construction of a test harness and ORACLE test stand.*
Accepted, although resources and priorities mean that it is unlikely the test harness and ORACLE test stand can be delivered by the time of the proposed delta review. A simple test system is, however, available to DBAs.
9. *The committee recommends that the development and operations teams review the list of workarounds, involving replacement of palliatives with features in the CASTOR core.*
Accepted. An initial review of the workarounds will be held by mid-July to establish the priority for replacing these with fixes to the CASTOR core.
10. *The committee recommends that the procedures and tools used to register bugs/problems, and their follow-up, are reviewed and documented to ensure all problems are dealt with in a timely manner.*
Accepted. We expect new procedures and tools to be in place by end-September.
11. *Understanding of the operations support effort requires a project plan and effort tracking. The committee recommends this be instantiated and maintained.*
Accepted. We consider the project plan to be covered under point 16 below; Effort tracking will be investigated, we propose to record self-assessments of work effort by the deployment/operations team from now on.
12. *The committee recommends that the project organizes a meeting with the 4 LHC experiments in order to reach agreement on a set of requirements and priorities for Service Monitoring Tools and a plan for their implementation.*
Accepted. A meeting will be organised end-June or early-July. The XML gateway to the LEMON monitoring repository will be delivered by end-August.
13. *CASTOR-2 will provide a critical service and will need the attention of a full-time DBA in order to tune and monitor performance, manage backups and consult for developers.*
Noted.

14. *The committee recommends that the project should aim to validate experimentally the scalability of the performance of CASTOR-2 to establish a performance envelope for the LHC experiments. These tests may impact on the general availability of CASTOR-2 and therefore should be planned in conjunction with WLCG Data and Service Challenges.*

Noted. This will be discussed with the WLCG project management.

15. *The committee recommends that the project should aim to clarify the policy for the support of CASTOR with its collaborators with a view to specifying the minimal effort and expertise required to operate a reliable CASTOR service and the level of support CERN can offer. The project should not take on any deployments at additional sites until it can clearly see sustaining them without sacrificing maturity of the software.*

Accepted.

16. *The committee suggests that FIO group management considers providing effort outside of the project to assist with the maintenance of a credible WBS and schedule covering both development and operation tasks.*

Accepted. We believe that, at least for the development plan, this recommendation can be met as a continuation of the changes since the FD section was formed. A schedule for deployment/operations exists and could be integrated although externally set milestones are not sufficiently well defined and coordinated, taking into account the resources available, for this to be considered credible. The validation milestones will be discussed with WLCG project management as mentioned under point 14 above.

17. *The committee recommends that the project management organize a 'delta review' in about 6 months to review the project plan and progress made.*

Accepted. We propose to set the date for this review by end-September (expected to be end-November or early-December).