

**Milestone Completion for the
LFSCK 4 Performance on the
Lustre* software FSCK Project of the
SFS-DEV-001 contract.**

Revision History

Date	Revision	Author
2014-12-9	Original	R. Henwood

Introduction

The following milestone completion document applies to Subproject 3.4 – LFSCK 4: Performance of the Lustre* FSCK on the OpenSFS Lustre Development contract SFS-DEV-001 signed July 30th, 2011.

Subproject Description

Per the scope statement, the project is described as follows:

This subproject ensures that LFSCK is ready to be used in production environments. It will characterize and optimize the performance of the features implemented in Subprojects 3.1-3.3, ensure that the performance impact of background scrubbing is sufficiently controlled, and determine whether Lustre protocol modifications (e.g. support for aggregate RPCs) are required. Administrative controls and monitoring will be finalized and documentation and procedures will be provided for system administrators.

Milestone Completion Criteria

Per the contract, Implementation milestone is described as follows:

Contractor shall complete implementation and unit testing for the approved solution. Contractor shall regularly report feature development progress including progress metrics at project meetings and engineers shall share interim unit testing results as they are available. OpenSFS at its discretion may request a code review. Completion of the implementation phase shall occur when the agreed to solution has been completed up to and including unit testing and this functionality can be demonstrated on a test cluster. Code Reviews shall include:

- a. *Discussion led by Contractor engineer providing an overview of Lustre source code changes*
- b. *Review of any new unit test cases that were developed to test changes*

* Other names and brands maybe the property of others.

Components of Completed Solution

Approach

After successfully completing all previous components of the LFSCCK project, Lustre file systems now have a complete solution for checking file consistency. LFSCCK can now scale by running in parallel and supports DNE file systems. This component of the LFSCCK work is concerned with performance. During previous LFSCCK development phases, a small number of performance enhancements were identified by were out of scope for the given contract. In addition, a review of LFSCCK documentation and a optimization evaluation was necessary at the final stage of the project. All of these agreed tasks have been completed and are recorded below:

Change #	Subject
12737	LU-1452 scrub: OI scrub skips uninitialized groups
12738	LU-1453 scrub: auto trigger OI scrub more flexible
12958	LU-1453 scrub: NOT miss to auto detect inconsistent OI mapping
12766	LU-5682 lfsck: optimize ldlm lock used by LFSCCK
	LU-5820 evaluation: linkEA verification history in RAM performance*
12966	LUDOC-259 lfsck: review and update LFSCCK documentation

* LU-5820 requires that a performance evaluation is completed for a proposed optimization. This is recorded in a separate document.

Conclusion

Implementation has been completed according to the agreed criteria.