



**Scope Statement
For the
Imperative Recovery Project
On the
ORNL Scalable File System Development Contract**

Revision History

Date	Revision	Author
01/07/2011	Original	I. Colle



Table of Contents

Introduction	1
Problem Statement	1
Project Goals	1
In-Scope	1
Out of Scope	1
Project Constraints	1
Project Assumptions.....	1
Key Deliverables	2
Key Milestones.....	2

Introduction

The following scope statement applies to the Imperative Recovery project within the ORNL Scalable File System Development contract signed 11/23/2010.

Problem Statement

Large cluster installations experience exceedingly long service outages during server failover and recovery. Recovery can only complete after all clients have detected the failure and discovered the failover server. Currently this process takes unacceptably long because it depends on timeouts scaled to accommodate congested service latency.

Project Goals

1. Shorten the recovery window by actively informing clients of a target failure
2. Actively inform all clients where to reconnect when a target has restarted after a failure
3. Clients reconnect to failed and restarted target without waiting for a timeout
4. Server completes recovery as soon as clients have all been notified without waiting for recovery timeout

In-Scope

- Imperative Recovery functionality on 2.x server baseline
- Bug fixes for related recovery issues, as prioritized and funded by ORNL

Out of Scope

- Imperative Recovery will not be backported to 1.8.x server baseline
- Not all recovery-related bugs identified will be fixed under this effort

Project Constraints

- In some extreme edge cases imperative recovery may not improve recovery times

Project Assumptions

- All clients will run a Lustre client version compatible with 2.x server version
- Computing resources at ORNL will be available for access by Whamcloud engineers, regardless of national citizenship, at least 20 hours/week during the assessment and implementation phases of the project

Key Deliverables

- Scope Statement
- Signed Milestone documents for project phases:
 - Solution Architecture
 - High-Level Design
 - Implementation
 - Demonstration
 - Delivery
- Test Plan and source code for new test cases
- Source code that meets feature requirements and runs with Lustre 2.x on customer's site

Key Milestones

The following are the currently projected milestones for this project. These will be reviewed at the completion of each milestone event and adjusted as necessary by joint approval of ORNL TPO and WC.

- Scope Statement 01/07/2011
- Solution Architecture Complete 01/28/2011
- High-Level Design Complete 03/22/2011
- Implementation Complete 09/02/2011
- Demonstration
 - Begin 09/06/2011
 - End 10/28/2011
- Delivery
 - Start 10/31/2011
 - End 11/30/2011
- Project Close Date 11/30/2011