Lustre* 2.6 Test Plan

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* Other names and brands may be claimed as the property of others.

Revision History

Date	Revision	Author
2013-10-10	Baseline Draft	Jodi Levi
2013-10-14	Format cleanup, Interop support updates, and test plan correction for Features	Jodi Levi
2013-10-16	Adding a feature to test plan and other minor updates	Jodi Levi
2013-10-16	Minor updates	Jodi Levi

Release Goals

The goal of this release is to provide a number of new Lustre features with quality that matches or surpasses Lustre 2.5.

Changes from Previous Release

The changes from Lustre 2.5 are:

- Adding FC/19 Client Support

Support Matrices

Clients
-RHEL/CentOS 6.x
-SLES11 SP3
-FC/19

Servers
-RHEL/CentOS 6.x

OFED
External OFED: 3.5.1
Inkernel OFED
Interoperability
Clients only: Latest 2.5.x
Server/Clients: Latest 2.5.x

Feature Test Areas

For new features being added to the release, specific feature testing plans are defined below. The list of features being added to the 2.6 release are:

- **LFSCK Phase II**
- **UID/GID Mapping**
- **IU Shared Secret Key Authentication and Encryption**
- **Add pool support to quota**

Candidate Features

LFSCK Phase II

This work will be tested manually according to the test plan located here:
https://jira.hpdd.intel.com/browse/LU-3423
TEST PLAN TO BE WRITTEN

Test Configuration	Owner	Est. Execution Time

UID/GID Mapping

This work will be tested manually according to the test plan located here:
https://jira.hpdd.intel.com/browse/LU-3527
TEST PLAN TO BE WRITTEN

Test Configuration	Owner	Est. Execution Time

IU Shared Secret Key Authentication and Encryption

This work will be tested manually according to the test plan located here:
https://jira.hpdd.intel.com/browse/LU-3289
TEST PLAN TO BE WRITTEN

Test Configuration	Owner	Est. Execution Time

Add pool support to quota

This work will be tested manually according to the test plan located here:
https://jira.hpdd.intel.com/browse/LU-4017
TEST PLAN TO BE WRITTEN

Test Configuration	Owner	Est. Execution Time

Functional Test Areas

The below functional test areas are automated unless otherwise noted.

Regression Testing

Use auster to run automated regression tests with the following configurations:

Test Configuration
RHEL6 Servers – RHEL 6 Clients Inkernel OFED – X86_64 – ldiskfs
RHEL6 Servers – SLES 11 SP3 Clients Inkernel OFED – X86_64
RHEL6 Servers – RHEL 6 Clients External OFED – X86_64
RHEL6 Server - FC/19(latest at time of testing) clients
RHEL6 Servers – RHEL 6 Clients Inkernel OFED – X86_64 – ZFS
Place holder for DNE

Stress Tests at Scale

Run LLNL Simulated Workload (SWL) for 24 hours. Run SWL for 24 additional hours with OST failover (random server crash) with ldiskfs.

Run LLNL Simulated Workload (SWL) for 24 hours. Run SWL for 24 additional hours with OST failover (random server crash) with ZFS.

Performance Testing

The performance test plan should be updated with each release to take into account any new features that may have impacts on Lustre* performance, and should note landings/bug fixes that may impact performance, or require performance validation.
The basic performance testing will comprise bulk data transfer, file creation and network tests using both single-shared file and file-per-process methods where applicable. The current test plan will use

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IOR(POSIX), mdsrate and lnet_selftest with other tests to be added as needed.
Testing will use a constant number of clients for each release to facilitate run-to-run comparison.
Tests will be run on a large scale resource (at least 100 clients) if available, for comparison with previous performance test results.
Results will be compared to the previous release of Lustre and the "bare metal" baseline (obtained from odbfilter-survey and lnet-selftest) on the same test configuration.
Results will meet or surpass the latest 1.8.x, 2.4.x, and 2.5.x versions and variations will be investigated. Results within 5% may be considered within normal variation. Runs resulting in issues and/or performance degradation greater than 5% will be marked as failed. Runs showing performance improvement greater than 10% will be checked for rationality issues such as improper test parameters.

Test Configuration
Performance with ldiskfs - run IOR with 50 and 100 clients (shared and fpp) - run mdsrate with 50 and 100 clients - run lnet_selftest with 50 and 100 clients
Performance with ZFS - run IOR with 50 and 100 clients (shared and fpp) - run mdsrate with 50 and 100 clients - run lnet_selftest with 50 and 100 clients

Interoperability

Interoperability testing will be completed between latest 2.5.x clients with 2.6 servers. This is supported on our autotest system on Toro and not run manually.

Test Configuration
Quotas- RHEL6 2.5 client RHEL6 2.6 server
Quotas- RHEL6 2.5 server RHEL6 2.6 client

Failover/Recovery Test

Execute recovery and failover testing for hard failure mode (powering off and on) with shared storage in server failover pairs. Soft failover is covered by the auster Regression test suite.

Test Configuration
Recovery test RHEL6 client with ldiskfs
Recovery test SLES11 SP3 client
Recovery test RHEL6 client with ZFS
Recovery test DNE
Recovery test FC/19

Upgrade/Downgrade

Execute clean and rolling upgrade and downgrade testing from latest 2.4.x and 2.5.x.

Test Configuration
Upgrade from latest 2.5.x (RHEL6/x86_64) ldiskfs to 2.6(RHEL6/x86_64) ldiskfs then downgrade to 2.5.x(RHEL6/x86_64) ldiskfs
Upgrade from 2.5 (RHEL6/x86_64) (ZFS) to 2.6 (RHEL6/x86_64) (ZFS) then downgrade to 2.5.x (RHEL6/x86_64) (ZFS)
Upgrade from latest 2.4.x (RHEL6/x86_64) ldiskfs to 2.6(RHEL6/x86_64) ldiskfs then downgrade to latest 2.4.x(RHEL6/x86_64) ldiskfs