**Lustre**[[1]](#footnote-1)\* **2.7 Test Plan**

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# Revision History

|  |  |  |
| --- | --- | --- |
| **Date** | **Revision** | **Author** |
| 2014-08-02 | Baseline Draft | Jodi Levi |
| 2014-08-21 | Performance Testing section update | Jodi Levi |
|  |  |  |
|  |  |  |
|  |  |  |

**Release Goals**

The goal of this release is to provide a number of new Lustre[[2]](#footnote-2)\* features with quality that matches or surpasses Lustre 2.6.

# 

# Changes from Previous Release

The changes from Lustre 2.6 are:

* Adding RHEL/CentOS 7.0 Client Support

# Support Matrices

|  |
| --- |
| **Clients** |
| -RHEL/CentOS 6.x and 7.x |
| -SLES11 SP3 |
|  |

|  |
| --- |
| **Servers** |
| -RHEL/CentOS 6.x |

|  |
| --- |
| **OFED** |
| External OFED: 3.12 |
| Inkernel OFED |
| **Interoperability** |
| Server/Clients: Latest 2.5.x and 2.6 |

# 

# 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 2.7 release are:

* **LFSCK Phase III**
* **Dynamic LNet Config (DLC)**
* **UID/GID Mapping**
* **Striping API**
* **OST Placement**
* **Deprecate procfs**

**Candidate Features**

## LFSCK Phase III

This work will be tested manually according to the test plan located here:

<https://jira.hpdd.intel.com/browse/LU-4788>

TEST PLAN TO BE WRITTEN

|  |  |  |
| --- | --- | --- |
| **Test Configuration** | **Owner** | **Est. Execution Time** |
|  | James Nunez?? |  |
|  |  |  |
|  |  |  |

## Dynamic LNet Config (DLC)

This work will be tested manually according to the test plan located here:

<https://jira.hpdd.intel.com/browse/LU-2456>

TEST PLAN TO BE WRITTEN

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| **Test Configuration** | **Owner** | **Est. Execution Time** |
|  |  |  |
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## UID/GID Mapping

This work will be tested manually according to the test plan located here:

<https://jira.hpdd.intel.com/browse/LU-3291>

TEST PLAN TO BE WRITTEN

|  |  |  |
| --- | --- | --- |
| **Test Configuration** | **Owner** | **Est. Execution Time** |
|  |  |  |
|  |  |  |

## Striping API

This work will be tested manually according to the test plan located here:

<https://jira.hpdd.intel.com/browse/LU-2182>

TEST PLAN TO BE WRITTEN

|  |  |  |
| --- | --- | --- |
| **Test Configuration** | **Owner** | **Est. Execution Time** |
|  |  |  |
|  |  |  |

## OST Placement

This work will be tested manually according to the test plan located here:

<https://jira.hpdd.intel.com/browse/LU-4665>

TEST PLAN TO BE WRITTEN

|  |  |  |
| --- | --- | --- |
| **Test Configuration** | **Owner** | **Est. Execution Time** |
|  |  |  |
|  |  |  |

## Deprecate procfs

This work will be tested manually according to the test plan located here:

<https://jira.hpdd.intel.com/browse/LU-5030>

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 Servers – RHEL 6 Clients  Inkernel OFED – X86\_64 – ZFS |
| RHEL6 Servers – RHEL 7 Clients  Inkernel OFED – X86\_64 – ldiskfs |
| RHEL6 Servers – RHEL 7 Clients  Inkernel OFED – X86\_64 – ZFS |

## 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 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 32 and 64 clients (shared and fpp)  - run mdsrate with 32 and 64 clients  - run lnet\_selftest with 32 and 64 clients |
| Performance with ZFS  - run IOR with 32 and 64 clients (shared and fpp)  - run mdsrate with 32 and 64 clients  - run lnet\_selftest with 32 and 64 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 latest 2.5.x client RHEL6 2.7 server |
| Quotas- RHEL6 latest 2.6.x server RHEL6 2.7 client |
| Quotas- RHEL6 2.6 client RHEL6 2.7 server |
| Quotas- RHEL6 2.5 server RHEL6 2.7 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 RHEL7 client with ldiskfs |
| Recovery test SLES11 SP3 client |
| Recovery test RHEL6 client with ZFS |
| Recovery test RHEL7 client with ZFS |
| Recovery test DNE |
|  |

## Upgrade/Downgrade

Execute clean and rolling upgrade and downgrade testing from latest 2.5.x and 2.6.x.

|  |
| --- |
| **Test Configuration** |
| Upgrade from latest 2.5.x (RHEL6/x86\_64) ldiskfs to  2.7(RHEL6/x86\_64) ldiskfs then downgrade to 2.5.x(RHEL6/x86\_64) ldiskfs |
| Upgrade from 2.5 (RHEL6/x86\_64) (ZFS) to 2.7 (RHEL6/x86\_64) (ZFS) then downgrade to 2.5.x (RHEL6/x86\_64) (ZFS) |
| Upgrade from latest 2.6.x (RHEL6/x86\_64) ldiskfs to 2.7(RHEL6/x86\_64) ldiskfs then downgrade to latest 2.6.x(RHEL6/x86\_64) ldiskfs |
| Upgrade from latest 2.6.x (RHEL6/x86\_64) ZFS to 2.7(RHEL6/x86\_64) ZFS then downgrade to latest 2.6.x(RHEL6/x86\_64) ZFS |

[[3]](#footnote-3)

1. \* Other names and brands may be claimed as the property of others. [↑](#footnote-ref-1)
2. \* Other names and brands may be claimed as the property of others. [↑](#footnote-ref-2)
3. \* Other names and brands may be claimed as the property of others. [↑](#footnote-ref-3)