

# Lustre 2.2 Changelog

## version 2.2.0

### Support for networks:

o2iblnd - OFED 1.5.4

### Server support for kernels:

2.6.32-220.4.2.el6 (RHEL6)

### Client support for unpatched kernels:

2.6.18-274.18.1.el5 (RHEL5)

2.6.32-220.4.2.el6 (RHEL6)

2.6.32.36-0.5 (SLES11)

### Recommended e2fsprogs version:

1.41.90.wc4

### Known Issues in 2.2.0:

[LU-1188](#) Panics can occur running sanity test while running with kernel debug options turned on

[LU-1191](#) Due to a known NFS-related bug in the kernel - [https://bugzilla.kernel.org/show\\_bug.cgi?id=38572](https://bugzilla.kernel.org/show_bug.cgi?id=38572) - users wanting to re-export Lustre via NFS should apply the kernel patch for this issue

[LU-1244](#) MDS survey tool has a known problem of not deleting OST objects when run in unlink mode, which might lead to unexpected space and inode shortage on OSTs in case of multiple runs

### Issues fixes between 2.1.0 and 2.2.0

#### Bug

- [LU-78](#) - kiblnd\_check\_conns can deadlock
- [LU-81](#) - Some JBD2 journaling deadlock at BULL
- [LU-106](#) - unable to handle kernel paging request in lprocfs\_stats\_collect()
- [LU-110](#) - Allow the use of a 2.0 MDS on a filesystem with a 1.8 disk format
- [LU-176](#) - disable mb\_cache by default
- [LU-233](#) - "Russian doll" test log tarballs
- [LU-322](#) - Fix for ost pool test in test suite
- [LU-357](#) - port bug24451 to master(racer test defect)
- [LU-362](#) - lu\_kmem\_init() needs error handling
- [LU-412](#) - auster found /usr/sbin/lfsck instead of lfsck.sh
- [LU-417](#) - block usage is reported as zero by stat call for tens of seconds after creating a file
- [LU-424](#) - conf-sanity test 55, 56, 58 do not work with separate MGS and MDT
- [LU-427](#) - Test failure on test suite lfsck
- [LU-431](#) - retry interval for failed memory allocating in o2iblnd is too long
- [LU-443](#) - Only squawk when md->start is NULL on non-zero length
- [LU-462](#) - lut\_client\_alloc/free() shouldn't be called for self\_export
- [LU-488](#) - LustreError: 4564:0:(connection.c:100:ptlrpc\_connection\_put()) ASSERTION(!cfs\_hlist\_unhashed(&conn->c\_hash)) failed
- [LU-499](#) - grant\_rate and cancel\_rate are static when an OST is idle
- [LU-508](#) - Kernel panic on ...BUILD/BUILD/lustre-ldiskfs-3.3.0/diskfs/extents.c:1920
- [LU-513](#) - cfs\_wait\_event\_interruptible\_exclusive is not exclusive
- [LU-515](#) - gpdd-survey.sh/sgpdd-survey doesn't play nice with devices specified by alias
- [LU-542](#) - Missing XATTR changelog record
- [LU-543](#) - Missing UNLINK record on overwriting rename
- [LU-574](#) - conf-sanity test\_41b: @@@@@@ FAIL: test\_41b failed with 1
- [LU-601](#) - kernel BUG at fs/jbd2/transaction.c:1030
- [LU-610](#) - port bug24512 to master(lfs find -s doesn't seem to work quite with >2GB args)
- [LU-613](#) - Lustre-Client dead-lock during binary exec() over Lustre FS
- [LU-617](#) - LBUG: (mdt\_recovery.c:787:mdt\_last\_rcvd\_update()) ASSERTION(req\_is\_replay(req)) failed
- [LU-620](#) - "Bad page state" reported after unlink
- [LU-625](#) - sanityn test\_32a test failure
- [LU-629](#) - \_debug\_req() never prints out opcode/flags/status
- [LU-633](#) - mds-survey script for MD echo client test
- [LU-635](#) - conf-sanity test\_29: @@@@@@ FAIL: test\_29 failed with 5
- [LU-639](#) - replay-dual test\_0b: @@@@@@ FAIL: mount1 fails
- [LU-645](#) - getcwd fails

- LU-646 - clarification of lustre fsync behavior
- LU-649 - client receives reply to lock cancel yet server evicts it 100 seconds later
- LU-651 - Strange error message "is it ok to have flags 0x... and 0x... in the same brw?"
- LU-665 - Reduce unnecessary connection flags MDSs send to OSSs
- LU-666 - mdd depends on ldiskfs-only dynlocks feature
- LU-668 - Rename MDS\_FL to LUSTRE\_FL and update usage
- LU-669 - mea.c unconditionally uses ldiskfs hashes
- LU-672 - mdd had panic on getting version for non existent file.
- LU-685 - Wide busy lock in kibldn\_pool\_alloc\_node
- LU-686 - conf-sanity test\_52: @@@@@@ FAIL: Unable to mount ost1 as ldiskfs
- LU-687 - Application is OOM-killed during page-fault resolution on its binary over Lustre when there is plenty of memory available
- LU-690 - port bug 24498 (conf-sanity test\_21a: @@@@@@ FAIL: can't put import for lustre-OST0000-osc(ost) into FULL state)
- LU-691 - sanity test\_133c defect
- LU-695 - port bz18750 attachment#32903(clean up for OBD\_FAIL\_CHECK\_ONCE)
- LU-699 - replay-dual test\_1 fails to remount mdt
- LU-700 - OSC BRW stats may be incorrect
- LU-707 - get\_version() in replay-vbr does not quote the FID string argument for do\_facet()
- LU-715 - Value read from qos\_threshold\_rr file does not match value written
- LU-717 - ext4 mmp block uses incorrect utsname field for nodename
- LU-719 - ldiskfs: MMP: kmmpd will print only one error message for any number of failed MMP block writes during its lifetime
- LU-721 - Parallel writes to same file results in a file of zeroes
- LU-728 - pdsh HOSTLIST expression support in test suite
- LU-731 - export ldlm\_lock\_set\_data and implement it correctly
- LU-734 - improve recovery-\* scale tests to put debug logs into \$LOGDIR
- LU-743 - Test failure on test suite conf-sanity, subtest test\_46a
- LU-745 - ost-pools test 23 hung
- LU-746 - obdfilter-survey FAIL: test\_1b ost4: hndls expected > 8, have 2
- LU-748 - sanity test 220 must be placed in SLOW set
- LU-753 - kernel:LustreError: 4998:0:(filter\_io\_26.c:791:filter\_commitrw\_write()) LBUG
- LU-759 - mdc\_enqueue() should clear rq\_replay when mdc\_enter\_request() fails
- LU-760 - Test failure on test suite sanity, subtest test\_180a
- LU-761 - Return values of ll\_prep\_md\_op\_data() should be checked using IS\_ERR().
- LU-762 - Hyperion - mdtest failure
- LU-766 - Incorrect HAVE\_STATFS\_DENTRY\_PARAM result
- LU-769 - Test failure on test suite conf-sanity, subtest test\_23a
- LU-770 - sanity.sh fails in CLIENTONLY mode
- LU-773 - Test failure on test suite sanity, subtest test\_105b
- LU-774 - Test failure on test suite replay-ost-single, subtest test\_7
- LU-780 - improve parallel-scale to support hyperion run
- LU-791 - sanity 27q hang
- LU-795 - per-transaction commit callbacks (ORI-107 port)
- LU-797 - Test failure on test suite ost-pools, subtest test\_14, test\_18, test\_23
- LU-803 - Test failure on test suite obdfilter-survey, subtest test\_3a
- LU-805 - lfs quota should show quota allocation rather than used
- LU-810 - Fix helpers for reading flags in HSM changelog records
- LU-817 - sgppdd-survey is encountering r/w errors on arrays using 2TB drives
- LU-819 - "lfs getstripe -M" broken
- LU-820 - Annoying "format at cl\_io.c:1551:cl\_req\_page\_add doesn't end in newline"
- LU-824 - fix corrupted ldiskfs after md rebuild
- LU-826 - Invalid memory free at mdd\_lov\_create\_finish.
- LU-831 - struct bit field type should be unsigned type
- LU-834 - fix page\_is\_vmlocked method for echo\_client
- LU-837 - missed semaphore release in gss\_do\_ctx\_init\_rpc
- LU-839 - conf\_sanity.sh test\_52 fails with loop devices
- LU-841 - sanity.sh 27q does not create a testing directory
- LU-843 - Several minor issues
- LU-844 - LBUG: ASSERTION(iobuf->dr\_npages < iobuf->dr\_max\_pages) when run obdfilter\_survey using rsz >= 2M
- LU-864 - Hostname name doesn't not equal NID and use facet\_mntpt instead of \$MOUNT%
- LU-867 - Fails to build with gss (lustre 2.1)
- LU-874 - Client eviction on lock callback timeout
- LU-878 - Test failure on test suite sanityn, subtest test\_40b
- LU-881 - shmem\_bump() notes "running" bumped without lock control
- LU-882 - Quota code causes run away ll\_ost\_io thread
- LU-887 - master (2.2) clients incompatible with 2.1 servers?
- LU-888 - lctl get\_param easily confused
- LU-889 - rework extent\_recovery\_timer()
- LU-898 - When copy data to 2.1 cluster via 1.8 client, all 2.1 OSS servers panic.
- LU-900 - Using ncli.sh as configuration file without SRUN installed will cause test failure
- LU-915 - MKFSOPTS fix for test suite
- LU-919 - Multiple wrong LBUGs checking cfs\_atomic\_t vars/fields with inaccurate poison value of 0x5a5a5a
- LU-924 - Test failure on test suite recovery-small, subtest test\_105
- LU-927 - cleanup ptrpc\_thread::t\_flags processing
- LU-931 - fsstress - LBUG (lustre\_idl.h:766:lu\_fid\_eq()) ASSERTION(fid\_is\_igif(f0) || fid\_ver(f0) == 0)
- LU-932 - cleanup ll\_inode\_info to reduce inode size
- LU-934 - external xattr inode support in e2fsprogs
- LU-935 - Crash lquota:dquot\_create\_oqaq+0x28f/0x510
- LU-948 - Client recovery hang
- LU-949 - sanity 42e failed
- LU-952 - Hung thread with HIGH OSS load

- [LU-955](#) - Lustre-modules 2.1 client rpm wrongly requires lustre-backend-fs
- [LU-958](#) - tests: debug\_mb set incorrectly for smp or vm
- [LU-960](#) - Bad stripe count reported by lfs getstripe when default stripe count set to -1
- [LU-966](#) - post-fsck MDS LBUG during recovery due to missing FID
- [LU-969](#) - 2.1 client stack overruns
- [LU-971](#) - Re-sent open requests cause mod\_count leakages
- [LU-972](#) - server shouldn't log a message to console each time a client connects
- [LU-976](#) - Test failure for mmp on ZFS filesystems
- [LU-980](#) - incompatible error handling
- [LU-983](#) - On a 1.8.6 client/host, tar is performing 10K reads, and the RPCs are typically one page in size for small files==tar is slow for small files using 1.8.6 vs 1.8.5
- [LU-985](#) - buffer overflow resulting in stack corruption
- [LU-987](#) - Fail to create ldisk rpms RHEL5
- [LU-993](#) - 1.8<->2.1.54 Test failure on test suite sanity :osd\_attr\_set() ASSERTION((oh) ->ot\_declare\_attr\_set > 0) failed
- [LU-997](#) - port the fix of 'max nested link count' from upstream e2fsprogs to master-lustre branch
- [LU-998](#) - Test failure on test suite sanity, subtest test\_103
- [LU-1014](#) - MGS with sys.timeout is ignored and if sys.timeout is changed its not synced across the file system.
- [LU-1017](#) - MDS oops when running racer test
- [LU-1023](#) - strange numbers shown in obdfilter-survey
- [LU-1028](#) - Bus error (core dumped) during fsx test
- [LU-1029](#) - EL6 kernel 2.6.32-220.el6 fails to build with OFA OFED 1.5.4
- [LU-1039](#) - data corruption in check\_set
- [LU-1042](#) - 1.8 clients show wrong dates with 2.1 servers
- [LU-1046](#) - fsstress - Watchdog detected hard LOCKUP on cpu 0
- [LU-1048](#) - Test failure on test suite conf-sanity
- [LU-1049](#) - lc\_net does not parse unexpected output from pdsh well
- [LU-1050](#) - configure broken on centos6.2 with OFED-1.5.4
- [LU-1051](#) - removing file failed due to no space left on device
- [LU-1053](#) - git commits fail when deleting files in the repo
- [LU-1055](#) - recovery-mds osd\_handler.c:1966:osd\_declare\_object\_destroy() ASSERTION(!lu\_object\_is\_dying(dt->do\_lu.lo\_header)) failed
- [LU-1059](#) - vvp\_page\_unmap() ASSERTION(PageLocked(vmpage)) failed
- [LU-1060](#) - Test failure on test suite replay-vbr, subtest test\_7c
- [LU-1061](#) - LBUG on cl\_locks\_prune()
- [LU-1067](#) - Crash on mds-survey. osd\_child\_dentry\_get+0x3c/0xb0 osd\_ldiskfs
- [LU-1069](#) - 2.1 <=> 2.1.55 Test failure on test suite sanity, subtest test\_103
- [LU-1070](#) - Inconsistent CLIO lock state maybe cause cl\_lock cannot be cached
- [LU-1073](#) - mandatory (LOCK\_MAND) flock requests cause unknown fcntl lock type: 32 Lustre error messages
- [LU-1074](#) - servers are umounted while the client is still doing job when running racer.sh by auster
- [LU-1075](#) - cannot run racer.sh by auster since there is a dir with the same name racer
- [LU-1080](#) - mds-survey crash
- [LU-1082](#) - add mds-survey to lustre-tests
- [LU-1084](#) - Console messages from sec stuff MUST GO
- [LU-1091](#) - tag matching not quite working
- [LU-1098](#) - Object doesn't exist!
- [LU-1109](#) - NFS server not responding when running parallel-scale test\_iorc
- [LU-1122](#) - MDS got LBUG after upgrade from 1.8.7-RHEL5 to 2.1.55-RHEL6 and then downgrade to 2.1.0-RHEL6
- [LU-1125](#) - crash in lc\_watchdog\_del\_pending during tgt\_recov
- [LU-1128](#) - Two ll\_ost\_io threads apparently stuck in shrinker code
- [LU-1133](#) - sanity-quota 33 fails
- [LU-1163](#) - Never try to invalidate a dirty page
- [LU-1206](#) - Executing unwritable, recently touched file returns ETXTBSY (Text file busy)
- [LU-1212](#) - On MDS startup upon client connection mdt\_xx threads Consume All Available CPU
- [LU-1213](#) - Duplicate setting of mdtest\_nFiles - parallel-scale.sh
- [LU-1222](#) - MDS crashes while running simul

## Improvement

- [LU-32](#) - always keep buffer\_head reference on root node of iam\_container
- [LU-143](#) - hash function of ldlm\_namespace and lu\_site is not good enough
- [LU-241](#) - support crc32c with hardware accelerated instruction as one of lustre checksums
- [LU-250](#) - Router random shuffling support.
- [LU-258](#) - obdfilter-survey needs cleanup
- [LU-278](#) - Tag check is broken in configure script
- [LU-335](#) - SuSE 11.1 and SuSE server pack 1 support for Lustre 1.8 and 2.X
- [LU-433](#) - remove jbd2-jcber patch from kernel
- [LU-448](#) - add lfstat --count
- [LU-459](#) - silence excess 2.x error messages
- [LU-527](#) - Update RHEL6 kernel to 2.6.32-131.6.1 security update
- [LU-532](#) - 2.1 does not filter extended attributes list based on permissions, showing entire list at all times
- [LU-537](#) - LNET fails to start with aliased interface in configuration
- [LU-553](#) - Add checkpatch.pl to validate patches for Lustre coding style
- [LU-554](#) - add gnilnd awareness to LNet
- [LU-555](#) - ll\_have\_md\_lock() code optimization
- [LU-570](#) - find connection uuid by peer nid
- [LU-571](#) - Remove Parallel AST limits
- [LU-572](#) - Make ptrpc\_recover\_import async
- [LU-575](#) - lfs find fixes
- [LU-579](#) - add CLOSE event into changelog
- [LU-611](#) - Add lfs find --stripe\_count --stripe\_index --stripe\_count

- [LU-624](#) - Kernel update [RHEL6.1 2.6.32-131.17.1.el6](#)
- [LU-641](#) - Use `cfs_rwlock_t` for `obd_dev_lock` instead of `spinlock`
- [LU-663](#) - Some architectures do not have NUMA features anymore
- [LU-680](#) - superblock <-> mount point mapping
- [LU-723](#) - External `ldiskfs` package support
- [LU-735](#) - Remove `fixme()` macro
- [LU-737](#) - can not attach device name starting with a digit
- [LU-778](#) - RHEL 6.2: `rdma_create_id()` takes four arguments
- [LU-781](#) - Kernel update [RHEL6.2 2.6.32-220.el6](#)
- [LU-792](#) - `lbuild-rhel5` should use redhat's SRPM repo
- [LU-794](#) - allow larger `O_DIRECT` requests with large allocations
- [LU-814](#) - automate NFSv3/v4 over Lustre Testing
- [LU-835](#) - add files to `.gitignore`
- [LU-846](#) - add `lfs_migrate.1` man page to list of installed pages
- [LU-847](#) - Merge some quota patches from Orion to 2.2
- [LU-848](#) - `clio` page writeback support
- [LU-871](#) - code cleanups for clang static analysis
- [LU-879](#) - Detail rename operation in stats file
- [LU-883](#) - `commit-msg` disallows common reference tags
- [LU-905](#) - keep BH reference on root node of IAM container
- [LU-928](#) - Update or improvement to a code comment
- [LU-930](#) - Update or improvement to a Lustre man page
- [LU-954](#) - `lbuild` should produce lustre-iokit rpms
- [LU-962](#) - Add a feature to run a callback in `ptlrpcd` context
- [LU-963](#) - update lustre/ChangeLog to reflect new `e2fsprogs`
- [LU-991](#) - cleanup LMV for DNE
- [LU-1025](#) - Lustre `crc32c` implementation not use final bit inversion
- [LU-1054](#) - Kernel update [RHEL6.2 2.6.32-220.4.1.el6](#)
- [LU-1077](#) - `build/autoconf/lustre-build-ldiskfs.m4` missing in tarball
- [LU-1081](#) - `LUSTRE_BFL_FID` has a conflicting namespace
- [LU-1095](#) - Console message cleanup
- [LU-1120](#) - Kernel update [RHEL6.2 2.6.32-220.4.2.el6](#)
- [LU-1146](#) - update copyright for all WC modified files in master before 2.2 release
- [LU-1195](#) - `ll_sai_put()` `ASSERTION(thread_is_stopped(&sai->sai_agl_thread)) failed`

## New Feature

- [LU-50](#) - `pdirops` patch for `ldiskfs`
- [LU-80](#) - Wide striping support
- [LU-389](#) - `Statahead`
- [LU-580](#) - Imperative Recovery
- [LU-593](#) - echo client for MDS
- [LU-822](#) - allow multiple Object Index files to be created
- [LU-884](#) - Client In-Memory Data Checksum
- [LU-909](#) - changes to OSD API
- [LU-925](#) - land Async Glimpse Lock (AGL) to master to pre-fetch size/block attributes from OSTs for `statahead`
- [LU-1019](#) - general `ptlrpcd` pool support to process kinds of async RPC efficiently on SMP client