

# ZooKeeper 3.3.0 Release Notes

by

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These release notes include new developer and user facing incompatibilities, features, and major improvements.

See [3.0 release notes and migration instructions](#) if you are upgrading from version 2 of ZooKeeper (SourceForge) to version 3 or later.

## 1. Changes Since ZooKeeper 3.2

| Issue                         | Notes  |
|-------------------------------|--|
| Sub-task                      |  |
| <a href="#">ZOOKEEPER-397</a> | mainline tests conversion  |
| Bug                           |  |
| <a href="#">ZOOKEEPER-3</a>   | syncLimit has slightly different comments in the class header, and > inline with the variable. |
| <a href="#">ZOOKEEPER-59</a>  | Synchronized block in NIOServerCnxn  |
| <a href="#">ZOOKEEPER-86</a>  | intermittent test failure of org.apache.zookeeper.test.AsyncTest                               |
| <a href="#">ZOOKEEPER-121</a> | SyncRequestProcessor is not closing log stream during shutdown                                 |
| <a href="#">ZOOKEEPER-287</a> | high cpu utilization caused by nioserver factory thread  |
| <a href="#">ZOOKEEPER-413</a> | two flaws need addressing in the c tests that can cause false positive failures                |
| <a href="#">ZOOKEEPER-420</a> | build/test should not require install in zkpython  |
| <a href="#">ZOOKEEPER-457</a> | Make ZookeeperMain public, support for HBase (and other) embedded clients                      |
| <a href="#">ZOOKEEPER-460</a> | bad testRetry in cppunit tests (hudson failure)  |
| <a href="#">ZOOKEEPER-466</a> | crash on zookeeper_close() when using auth with empty cert                                     |
| <a href="#">ZOOKEEPER-467</a> | Change log level in BookieHandle   |
| <a href="#">ZOOKEEPER-468</a> | avoid compile warning in send_auth_info()  |
| <a href="#">ZOOKEEPER-469</a> | make sure CPPUNIT_CFLAGS isn't overwritten   |
| <a href="#">ZOOKEEPER-470</a> | include unistd.h for sleep() in c tests  |

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| <a href="#">ZOOKEEPER-475</a> | FLENewEpochTest failed on nightly builds.   |
| <a href="#">ZOOKEEPER-477</a> | zkCleanup.sh is flaky   |
| <a href="#">ZOOKEEPER-479</a> | QuorumHierarchical does not count groups correctly                                |
| <a href="#">ZOOKEEPER-480</a> | FLE should perform leader check when node is not leading and add vote of follower |
| <a href="#">ZOOKEEPER-481</a> | Add lastMessageSent to QuorumCnxManager   |
| <a href="#">ZOOKEEPER-482</a> | ignore sigpipe in testRetry to avoid silent immediate failure                     |
| <a href="#">ZOOKEEPER-483</a> | ZK fataled on me, and ugly  |
| <a href="#">ZOOKEEPER-484</a> | Clients get SESSION MOVED exception when switching from follower to a leader.     |
| <a href="#">ZOOKEEPER-485</a> | need ops documentation that details supervision of ZK server processes            |
| <a href="#">ZOOKEEPER-487</a> | setdata on root (/) crashes the servers.  |
| <a href="#">ZOOKEEPER-489</a> | findbugs on hudson.zones.a.o has jumped way up (2k+)                              |
| <a href="#">ZOOKEEPER-490</a> | the java docs for session creation are misleading/incomplete                      |
| <a href="#">ZOOKEEPER-491</a> | Prevent zero-weight servers from being elected                                    |
| <a href="#">ZOOKEEPER-493</a> | patch for command line setquota   |
| <a href="#">ZOOKEEPER-495</a> | c client logs an invalid error when zookeeper_init is called with chroot          |
| <a href="#">ZOOKEEPER-498</a> | Unending Leader Elections : WAN configuration                                     |
| <a href="#">ZOOKEEPER-499</a> | electionAlg should default to FLE (3) - regression                                |
| <a href="#">ZOOKEEPER-501</a> | CnxManagerTest failed on hudson   |
| <a href="#">ZOOKEEPER-502</a> | bookkeeper create calls completion too many times                                 |
| <a href="#">ZOOKEEPER-503</a> | race condition in asynchronous create   |
| <a href="#">ZOOKEEPER-504</a> | ClassCastException in   |

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|                               | LedgerManagementProcessor   |
| <a href="#">ZOOKEEPER-505</a> | testAsyncCreateClose is badly broken  |
| <a href="#">ZOOKEEPER-508</a> | proposals and commits for DIFF and Truncate messages from the leader to followers is buggy.       |
| <a href="#">ZOOKEEPER-509</a> | Truncating of logs does not work right at the followers.  |
| <a href="#">ZOOKEEPER-510</a> | zkpython lumps all exceptions as IOError, needs specialized exceptions for KeeperException types  |
| <a href="#">ZOOKEEPER-511</a> | bad error handling in FollowerHandler.sendPackets   |
| <a href="#">ZOOKEEPER-512</a> | FLE election fails to elect leader  |
| <a href="#">ZOOKEEPER-514</a> | test failure on trunk in testCnxManager - NPE   |
| <a href="#">ZOOKEEPER-519</a> | Followerhandler should close the socket if it gets an exception on a write.                       |
| <a href="#">ZOOKEEPER-524</a> | DBSizeTest is not really testing anything   |
| <a href="#">ZOOKEEPER-527</a> | hudson trunk failure in quota test  |
| <a href="#">ZOOKEEPER-528</a> | c client exists() call with watch on large number of nodes (>100k) causes connection loss         |
| <a href="#">ZOOKEEPER-530</a> | Memory corruption: Zookeeper c client IPv6 implementation does not honor struct sockaddr_in6 size |
| <a href="#">ZOOKEEPER-531</a> | Hudson trunk failure in heirarchical quorum test (interrupt problem)                              |
| <a href="#">ZOOKEEPER-532</a> | java compiler should be target Java 1.5   |
| <a href="#">ZOOKEEPER-533</a> | ant error running clean twice   |
| <a href="#">ZOOKEEPER-534</a> | The test target in contib/bookkeeper does not depend on jar target.                               |
| <a href="#">ZOOKEEPER-535</a> | ivy task does not enjoy being defined twice (build error)   |
| <a href="#">ZOOKEEPER-537</a> | The zookeeper jar includes the java source files  |
| <a href="#">ZOOKEEPER-538</a> | zookeeper.async causes python to segfault   |

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| <a href="#">ZOOKEEPER-540</a> | zkpython needs better tracking of handle validity                                  |
| <a href="#">ZOOKEEPER-541</a> | zkpython limited to 256 handles  |
| <a href="#">ZOOKEEPER-542</a> | c-client can spin when server unresponsive   |
| <a href="#">ZOOKEEPER-547</a> | Sanity check in QuorumCnxn Manager and quorum communication port.                  |
| <a href="#">ZOOKEEPER-548</a> | zookeeper.ZooKeeperException not added to the module in zkpython                   |
| <a href="#">ZOOKEEPER-551</a> | unnecessary SetWatches message on new session                                      |
| <a href="#">ZOOKEEPER-554</a> | zkpython can segfault when statting a deleted node                                 |
| <a href="#">ZOOKEEPER-557</a> | Upload Zookeeper jars to a public maven repository                                 |
| <a href="#">ZOOKEEPER-558</a> | server "sent" stats not being updated  |
| <a href="#">ZOOKEEPER-562</a> | c client can flood server with pings if tcp send queue filled                      |
| <a href="#">ZOOKEEPER-563</a> | ant test for recipes is broken.  |
| <a href="#">ZOOKEEPER-566</a> | "reqs" four letter word (command port) returns no information                      |
| <a href="#">ZOOKEEPER-567</a> | javadoc for getchildren2 needs to mention "new in 3.3.0"                           |
| <a href="#">ZOOKEEPER-568</a> | SyncRequestProcessor snapping too frequently - counts non-log events as log events |
| <a href="#">ZOOKEEPER-569</a> | Failure of elected leader can lead to never-ending leader election                 |
| <a href="#">ZOOKEEPER-570</a> | AsyncHammerTest is broken, callbacks need to validate rc parameter                 |
| <a href="#">ZOOKEEPER-573</a> | the dump 4letterword is not formatting sessionids in hex                           |
| <a href="#">ZOOKEEPER-574</a> | the documentation on snapcount in the admin guide has the wrong default            |
| <a href="#">ZOOKEEPER-576</a> | docs need to be updated for session moved exception and how to handle it           |

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| <a href="#">ZOOKEEPER-582</a> | ZooKeeper can revert to old data when a snapshot is created outside of normal processing                             |
| <a href="#">ZOOKEEPER-586</a> | c client does not compile under cygwin   |
| <a href="#">ZOOKEEPER-587</a> | client should log timeout negotiated with server   |
| <a href="#">ZOOKEEPER-588</a> | remove unnecessary/annoying log of toString error in Request.toString()  |
| <a href="#">ZOOKEEPER-589</a> | When create a znode, a NULL ACL parameter cannot be accepted   |
| <a href="#">ZOOKEEPER-591</a> | The C Client cannot exit properly in some situation  |
| <a href="#">ZOOKEEPER-593</a> | java client api does not allow client to access negotiated session timeout   |
| <a href="#">ZOOKEEPER-596</a> | The last logged zxid calculated by zookeeper servers could cause problems in leader election if data gets corrupted. |
| <a href="#">ZOOKEEPER-597</a> | ASyncHammerTest is failing intermittently on hudson trunk  |
| <a href="#">ZOOKEEPER-600</a> | TODO pondering about allocation behavior in zkpython may be removed  |
| <a href="#">ZOOKEEPER-604</a> | zk needs to prevent export of any symbol not listed in their api   |
| <a href="#">ZOOKEEPER-606</a> | bin scripts don't work in cygwin (spaces in paths)   |
| <a href="#">ZOOKEEPER-609</a> | ObserverTest failure "zk should not be connected expected not same"  |
| <a href="#">ZOOKEEPER-610</a> | cleanup final fields, esp those used for locking   |
| <a href="#">ZOOKEEPER-611</a> | hudson build failiure  |
| <a href="#">ZOOKEEPER-614</a> | Improper synchronisation in getClientCnxnCount   |
| <a href="#">ZOOKEEPER-615</a> | wrong javadoc for create with a sequence flag  |
| <a href="#">ZOOKEEPER-617</a> | improve cluster setup documentation in forrest   |
| <a href="#">ZOOKEEPER-619</a> | hudson test failure in QuorumTest -- timeout error   |

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| <a href="#">ZOOKEEPER-620</a> | hudson is not reporting compiler warning correctly                           |
| <a href="#">ZOOKEEPER-621</a> | hudson failure ZooKeeper-trunk/621 - clover issue                            |
| <a href="#">ZOOKEEPER-622</a> | Test for pending watches in send_set_watches should be moved                 |
| <a href="#">ZOOKEEPER-623</a> | ClientBase in bookkeeper.util requires junit                                 |
| <a href="#">ZOOKEEPER-624</a> | The C Client cause core dump when receive error data from Zookeeper Server   |
| <a href="#">ZOOKEEPER-626</a> | ensure the c/java cli's print xid/sessionid/etc... in hex                    |
| <a href="#">ZOOKEEPER-627</a> | zkpython arbitrarily restricts the size of a 'get' to 512 bytes              |
| <a href="#">ZOOKEEPER-629</a> | FLELostMessageTest assumes that the first zxid on a startup of quorum is -1. |
| <a href="#">ZOOKEEPER-630</a> | Trunk has duplicate ObserverTest.java files                                  |
| <a href="#">ZOOKEEPER-644</a> | Nightly build failed on hudson.  |
| <a href="#">ZOOKEEPER-647</a> | hudson failure in testLeaderShutdown   |
| <a href="#">ZOOKEEPER-656</a> | SledgeHammer test - thread.run() deprecated                                  |
| <a href="#">ZOOKEEPER-663</a> | hudson failure in ZKDatabaseCorruptionTest                                   |
| <a href="#">ZOOKEEPER-667</a> | java client doesn't allow ipv6 numeric connect string                        |
| <a href="#">ZOOKEEPER-668</a> | Close method in LedgerInputStream doesn't do anything                        |
| <a href="#">ZOOKEEPER-669</a> | watchedevent toString should clearly output the state/type/path              |
| <a href="#">ZOOKEEPER-673</a> | Fix observer documentation regarding leader election                         |
| <a href="#">ZOOKEEPER-677</a> | c client doesn't allow ipv6 numeric connect string                           |
| <a href="#">ZOOKEEPER-681</a> | Minor doc issue re unset maxClientCnxns                                      |
| <a href="#">ZOOKEEPER-682</a> | Event is not processed when the watcher is set to watch "/" if chrooted      |

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| <a href="#">ZOOKEEPER-683</a> | LogFormatter fails to parse transactional log files                            |
| <a href="#">ZOOKEEPER-684</a> | Race in LENonTerminateTest   |
| <a href="#">ZOOKEEPER-687</a> | LENonTerminatetest fails on some machines.                                     |
| <a href="#">ZOOKEEPER-688</a> | explain session expiration better in the docs & faq                            |
| <a href="#">ZOOKEEPER-689</a> | release build broken - ivysettings.xml not copied during "package"             |
| <a href="#">ZOOKEEPER-691</a> | Interface changed for NIOServer.Factory  |
| <a href="#">ZOOKEEPER-693</a> | TestObserver stuck in tight notification loop in FLE                           |
| <a href="#">ZOOKEEPER-696</a> | NPE in the hudson logs, seems nioservercnxn closed twice                       |
| <a href="#">ZOOKEEPER-698</a> | intermittent JMX test failures due to not verifying QuorumPeer shutdown        |
| <a href="#">ZOOKEEPER-708</a> | zkpython failing due to undefined symbol deallocate_String_vector              |
| <a href="#">ZOOKEEPER-709</a> | bookkeeper build failing with missing factory                                  |
| <a href="#">ZOOKEEPER-710</a> | permanent ZSESSIONMOVED error after client app reconnects to zookeeper cluster |
| <a href="#">ZOOKEEPER-718</a> | the fatjar is missing libraries  |
| Improvement                   |  |
| <a href="#">ZOOKEEPER-62</a>  | Generally improve logging to enable debuggability in the field.                |
| <a href="#">ZOOKEEPER-152</a> | Improve unit tests for leader election   |
| <a href="#">ZOOKEEPER-158</a> | Leader and followers increase cpu utilization upon loss of a follower          |
| <a href="#">ZOOKEEPER-283</a> | Add more javadocs to BookKeeper  |
| <a href="#">ZOOKEEPER-311</a> | handle small path lengths in zoo_create()                                      |
| <a href="#">ZOOKEEPER-425</a> | Add OSGi metadata to zookeeper.jar   |
| <a href="#">ZOOKEEPER-426</a> | Windows versions of zookeeper scripts  |
| <a href="#">ZOOKEEPER-436</a> | Bookies should auto register to ZooKeeper                                      |



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| <a href="#">ZOOKEEPER-447</a> | zkServer.sh doesn't allow different config files to be specified on the command line                |
| <a href="#">ZOOKEEPER-456</a> | CREATOR_ALL_ACL has unnecessary PERMS.ADMIN in the declaration.                                     |
| <a href="#">ZOOKEEPER-461</a> | Condense ledger configuration in ZooKeeper  |
| <a href="#">ZOOKEEPER-471</a> | update zkperl for 3.2.x branch  |
| <a href="#">ZOOKEEPER-472</a> | Making DataNode not instantiate a HashMap when the node is ephemeral                                |
| <a href="#">ZOOKEEPER-473</a> | cleanup junit tests to eliminate false positives due to "socket reuse" and failure to close client  |
| <a href="#">ZOOKEEPER-476</a> | upgrade junit library from 4.4 to 4.6   |
| <a href="#">ZOOKEEPER-486</a> | Improve bookie performance for large number of ledgers  |
| <a href="#">ZOOKEEPER-488</a> | to fix src/c/tests/zkServer.sh script to add clover in classpath                                    |
| <a href="#">ZOOKEEPER-506</a> | QuorumBase should use default leader election   |
| <a href="#">ZOOKEEPER-507</a> | BookKeeper client re-write  |
| <a href="#">ZOOKEEPER-529</a> | Use Ivy to pull dependencies and also generate pom  |
| <a href="#">ZOOKEEPER-543</a> | Tests for ZooKeeper examples  |
| <a href="#">ZOOKEEPER-544</a> | improve client testability - allow test client to access connected server location                  |
| <a href="#">ZOOKEEPER-549</a> | Refactor Followers and related classes into a Peer->Follower hierarchy in preparation for Observers |
| <a href="#">ZOOKEEPER-555</a> | Add stat information to GetChildrenResponse   |
| <a href="#">ZOOKEEPER-560</a> | inefficient request handling in NIOServerCnxn   |
| <a href="#">ZOOKEEPER-561</a> | inefficient buffer management, inefficient gc, in NIOServer request handling                        |
| <a href="#">ZOOKEEPER-564</a> | Give more feedback on that current flow of events in java client logs                               |
| <a href="#">ZOOKEEPER-565</a> | Revisit some java client log messages   |

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| <a href="#">ZOOKEEPER-572</a> | add ability for operator to examine state of watches currently registered with a server |
| <a href="#">ZOOKEEPER-579</a> | zkpython needs more test coverage for ACL code paths                                    |
| <a href="#">ZOOKEEPER-595</a> | A means of asking quorum what configuration it is running with                          |
| <a href="#">ZOOKEEPER-599</a> | Changes to FLE and QuorumCnxManager to support Observers                                |
| <a href="#">ZOOKEEPER-601</a> | allow configuration of session timeout min/max bounds                                   |
| <a href="#">ZOOKEEPER-607</a> | improve bookkeeper overview   |
| <a href="#">ZOOKEEPER-608</a> | Receipt of ACK from observer should not be logged as ERROR                              |
| <a href="#">ZOOKEEPER-612</a> | Make Zookeeper C client can be compiled by gcc of early version                         |
| <a href="#">ZOOKEEPER-632</a> | add some documentation or FAQ on how to do rolling upgrade                              |
| <a href="#">ZOOKEEPER-633</a> | Fetch netty using ivy for bookkeeper  |
| <a href="#">ZOOKEEPER-638</a> | upgrade ivy to 2.1.0 final from 2.1.0 release candidate                                 |
| <a href="#">ZOOKEEPER-640</a> | make build.xml more configurable to ease packaging for linux distros                    |
| <a href="#">ZOOKEEPER-648</a> | Fix releaseaudit warning count to zero  |
| <a href="#">ZOOKEEPER-651</a> | Log exception trace in QuorumCnxManager.SendWorker                                      |
| <a href="#">ZOOKEEPER-655</a> | StringBuffer -> StringBuilder - conversion of references as necessary                   |
| <a href="#">ZOOKEEPER-658</a> | update forrest docs - AuthFLE no longer supported                                       |
| <a href="#">ZOOKEEPER-664</a> | BookKeeper API documentation  |
| <a href="#">ZOOKEEPER-665</a> | Add BookKeeper streaming documentation  |
| <a href="#">ZOOKEEPER-672</a> | typo nits across documentation  |

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| <a href="#">ZOOKEEPER-692</a> | upgrade junit to latest version (4.8.1)                                     |
| <a href="#">ZOOKEEPER-717</a> | add a preferred list to the instancemanager                                 |
| New Feature                   |   |
| <a href="#">ZOOKEEPER-368</a> | Observers: core functionality   |
| <a href="#">ZOOKEEPER-496</a> | zookeeper-tree utility for export, import and incremental updates           |
| <a href="#">ZOOKEEPER-539</a> | generate eclipse project via ant target                                     |
| <a href="#">ZOOKEEPER-550</a> | Java Queue Recipe   |
| <a href="#">ZOOKEEPER-635</a> | Server supports listening on a specified network address                    |
| <a href="#">ZOOKEEPER-678</a> | Browser application to view and edit the contents of a zookeeper instance   |
| Task                          |   |
| <a href="#">ZOOKEEPER-224</a> | Deploy ZooKeeper jars/artifacts to a Maven Repository                       |
| <a href="#">ZOOKEEPER-516</a> | add support for 10 minute test ie "pre-commit" test                         |
| <a href="#">ZOOKEEPER-521</a> | include autotools (autoconf/automake) in NOTICE file                        |
| Test                          |   |
| <a href="#">ZOOKEEPER-394</a> | Converting JUnit tests into TestNG controlled environment                   |
| <a href="#">ZOOKEEPER-518</a> | DEBUG message for outstanding proposals in leader should be moved to trace. |

**Table 1: Changes Since ZooKeeper 3.2**