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Hadoop YARN / YARN-9341

## Reentrant lock() before try

Details

Type:	Bug	Status:	RESOLVED
Priority:	Minor	Resolution:	Fixed
Affects Version/s:	3.1.0	Fix Version/s:	3.3.0
Component/s:	yarn		
Labels:	None		

Description

As a best practice - Reentrant lock has to be acquired before try clause.  
<https://stackoverflow.com/questions/31058681/java-locking-structure-best-pattern>

There are many places where lock is obtained inside try.

```
try {
    this.writeLock.lock();
    ....
} finally {
    this.writeLock.unlock();
}
```

Attachments

<a href="#">YARN-9341-001.patch</a>	176 kB	04/Mar/19 07:34
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Issue Links

is duplicated by

<a href="#">YARN-10347</a> Fix double locking in CapacityScheduler#reinitialize in branch-3.1	RESOLVED
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Activity

[Prabhu Joseph](#) added a comment - 04/Mar/19 07:35

Reviewed below files which are using lock() in hadoop-yarn-project.

```
HW12663:hadoop-yarn-project pjoseph$ find . -name *.java | xargs grep -w "lock()" | wc -l
662
```

[Hadoop QA](#) added a comment - 04/Mar/19 11:28

-1 overall


Vote	Subsystem	Runtime	Comment
0	reexec	0m 20s	Docker mode activated.
			Prechecks
+1	@author	0m 0s	The patch does not contain any @author tags.
+1	test4tests	0m 0s	The patch appears to include 1 new or modified test files.
			trunk Compile Tests
0	mvndep	0m 14s	Maven dependency ordering for branch
+1	mvninstall	17m 24s	trunk passed
+1	compile	10m 32s	trunk passed
+1	checkstyle	1m 57s	trunk passed
+1	mvnsite	4m 37s	trunk passed
+1	shadedclient	19m 3s	branch has no errors when building and testing our client artifacts.

+1	findbugs	5m 3/s	trunk passed
+1	javadoc	2m 54s	trunk passed
			<b>Patch Compile Tests</b>
0	mvndep	0m 14s	Maven dependency ordering for patch
+1	mvninstall	2m 55s	the patch passed
+1	compile	8m 18s	the patch passed
+1	javac	8m 18s	the patch passed
+1	checkstyle	1m 45s	the patch passed
+1	mvnsite	3m 34s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	shadedclient	12m 25s	patch has no errors when building and testing our client artifacts.
+1	findbugs	6m 8s	the patch passed
+1	javadoc	2m 44s	the patch passed
			<b>Other Tests</b>
+1	unit	3m 43s	hadoop-yarn-common in the patch passed.
+1	unit	21m 21s	hadoop-yarn-server-nodemanager in the patch passed.
+1	unit	4m 7s	hadoop-yarn-server-applicationhistoryservice in the patch passed.
-1	unit	82m 56s	hadoop-yarn-server-resourcemanager in the patch failed.
+1	unit	18m 1s	hadoop-yarn-services-core in the patch passed.
+1	asflicense	0m 36s	The patch does not generate ASF License warnings.
		227m 32s	


Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.metrics.TestSystemMetricsPublisherForV2
	hadoop.yarn.server.resourcemanager.metrics.TestCombinedSystemMetricsPublisher

Subsystem	Report/Notes
Docker	Client=17.05.0-ce Server=17.05.0-ce Image:yetus/hadoop:8f97d6f
JIRA Issue	<a href="#">YARN-9341</a>
JIRA Patch URL	<a href="https://issues.apache.org/jira/secure/attachment/12960960/YARN-9341-001.patch">https://issues.apache.org/jira/secure/attachment/12960960/YARN-9341-001.patch</a>
Optional Tests	dupname asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux 8e71e16044df 4.4.0-138-generic #164~14.04.1-Ubuntu SMP Fri Oct 5 08:56:16 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/patchprocess/precommit/personality/provided.sh
git revision	trunk / 9e53088
maven	version: Apache Maven 3.3.9
Default Java	1.8.0_191
findbugs	v3.1.0-RC1
unit	<a href="https://builds.apache.org/job/PreCommit-YARN-Build/23617/artifact/out/patch-unit-hadoop-yarn-project_hadoop-yarn_hadoop-yarn-server_hadoop-yarn-server-resourcemanager.txt">https://builds.apache.org/job/PreCommit-YARN-Build/23617/artifact/out/patch-unit-hadoop-yarn-project_hadoop-yarn_hadoop-yarn-server_hadoop-yarn-server-resourcemanager.txt</a>
Test Results	<a href="https://builds.apache.org/job/PreCommit-YARN-Build/23617/testReport/">https://builds.apache.org/job/PreCommit-YARN-Build/23617/testReport/</a>
Max. process+thread count	935 (vs. ulimit of 10000)
modules	C: hadoop-yarn-project/hadoop-yarn/hadoop-yarn-common hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-applicationhistoryservice hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager hadoop-yarn-project/hadoop-yarn/hadoop-yarn-applications/hadoop-yarn-services/hadoop-yarn-services-core U: hadoop-yarn-project/hadoop-yarn
Console output	<a href="https://builds.apache.org/job/PreCommit-YARN-Build/23617/console">https://builds.apache.org/job/PreCommit-YARN-Build/23617/console</a>
Powered by	Apache Yetus 0.8.0 <a href="http://yetus.apache.org">http://yetus.apache.org</a>


This message was automatically generated.

▼  **Prabhu Joseph** added a comment - 04/Mar/19 13:25

[ajisakaa](#) Can you review this jira. The patch failures are not related and handled in [YARN-9338](#).

▼  **Eric Yang** added a comment - 04/Mar/19 19:01 - edited


[prabhujoseph](#) When lock is moved outside of try, unlock may throw `IllegalMonitorStateException`, which is a `RuntimeException`. The caller must handle `RuntimeException` correctly otherwise some threads may stop working when unable to lock.

▼  **Wilfred Spiegelenburg** added a comment - 05/Mar/19 02:19 - edited


An `IllegalMonitorStateException` can only happen on unlock if the current thread is not the owner of the lock. I don't think we use `tryLock` or `lockInterruptibly` anywhere in our code and thus do not need to worry about the `IllegalMonitorStateException`. When you call lock the thread is blocked until the point you acquire the lock. We should thus never proceed beyond the lock line and the finally clause should never be executed until after the thread has lock.

The change proposed is even following the java [API doc](#) for the locking.

+1 (non binding)


▼  **Eric Yang** added a comment - 05/Mar/19 22:34

`hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/test/java/org/apache/hadoop/yarn/server/nodemanager/containermanager/logaggregation/TestLogAggregationService.java` uses `tryLock`. The test case might need to be handled with more care.

▼  **Wilfred Spiegelenburg** added a comment - 06/Mar/19 02:21 - edited

So we do have one and also one `lockInterruptibly()` in another part. The change as proposed by [prabhujoseph](#) have left those two unchanged, neither are covered under the description of the jira either. It just talks about the `lock()` cases.

The only replacements that have been made are the direct calls to `lock()` in the patch neither of the two other ones have been touched. That is where I based my +1 on

▼  **Eric Yang** added a comment - 07/Mar/19 21:45

[wilfreds](#) You are right. They have been handled correctly. Thank you for the review.

+1

▼  **Eric Yang** added a comment - 07/Mar/19 21:49 - edited

Thank you [prabhujoseph](#) for the patch.

Thank you [wilfreds](#) for the review.

I committed this patch to trunk.


▼  **Hudson** added a comment - 07/Mar/19 21:49

FAILURE: Integrated in Jenkins build Hadoop-trunk-Commit #16157 (See <https://builds.apache.org/job/Hadoop-trunk-Commit/16157/>) [YARN-9341](#). Fixed enentrant lock usage in YARN project. (eyang: rev 39b4a37e02e929a698fc9e32f1f71bb6b977635)

- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/monitor/capacity/IntraQueueCandidatesSelector.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/constraint/MemoryPlacementConstraintManager.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/ManagedParentQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/AppSchedulingInfo.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/LeafQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/AbstractCSQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/placement/PlacementManager.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/CapacityScheduler.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/AbstractYarnScheduler.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/rmapp/RMApplImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/nodelabels/NodeAttributesManagerImpl.java`

- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/main/java/org/apache/hadoop/yarn/server/nodemanager/containermanager/localizer/LocalizedResource.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/volume/csi/lifecycle/VolumeImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/rmcontainer/RMContainerImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/AbstractResourceUsage.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/main/java/org/apache/hadoop/yarn/server/nodemanager/containermanager/application/ApplicationImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/rmapp/attempt/RMAppAttemptImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-common/src/main/java/org/apache/hadoop/yarn/client/api/impl/FileSystemTimelineWriter.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-applications/hadoop-yarn-services/hadoop-yarn-services-core/src/main/java/org/apache/hadoop/yarn/service/ServiceManager.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/ParentQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/queuemanagement/GuaranteedOrZeroCapacityQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-applicationhistoryservice/src/main/java/org/apache/hadoop/yarn/server/timeline/LevelDbTimelineStore.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/ReservationQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/SchedulerApplicationAttempt.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/placement/SingleConstraintAppPlacementAllocator.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/security/NMTokenSecretManagerInRM.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/test/java/org/apache/hadoop/yarn/server/nodemanager/containermanager/logaggregation/TestLogAggregationService.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/main/java/org/apache/hadoop/yarn/server/nodemanager/ContainerExecutor.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/common/fica/FiCaSchedulerApp.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/AbstractAutoCreatedLeafQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/fair/FSAppAttempt.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/main/java/org/apache/hadoop/yarn/server/nodemanager/containermanager/container/ContainerImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/ResourceUsage.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/placement/LocalityAppPlacementAllocator.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-nodemanager/src/main/java/org/apache/hadoop/yarn/server/nodemanager/containermanager/linux/resources/CGroupsHandlerImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/QueueCapacities.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-applications/hadoop-yarn-services/hadoop-yarn-services-core/src/main/java/org/apache/hadoop/yarn/service/component/Component.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/PlanQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/monitor/capacity/ProportionalCapacityPreemptionPolicy.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-applications/hadoop-yarn-services/hadoop-yarn-services-core/src/main/java/org/apache/hadoop/yarn/service/component/instance/ComponentInstance.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/fifo/FifoAppAttempt.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/AbstractManagedParentQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/AutoCreatedLeafQueue.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/monitor/capacity/FifoCandidatesSelector.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/rmapp/attempt/RMAppAttemptMetrics.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-common/src/main/java/org/apache/hadoop/yarn/nodelabels/NonAppendableFSNodeLabelStore.java`


- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/rmnode/RMNodeImpl.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/UsersManager.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-common/src/main/java/org/apache/hadoop/yarn/nodelabels/CommonNodeLabelsManager.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-common/src/main/java/org/apache/hadoop/yarn/security/ConfiguredYarnAuthorizer.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/preemption/PreemptionManager.java`
- (edit) `hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/nodelabels/RMNodeLabelsManager.java`

▾  [Prabhu Joseph](#) added a comment - 08/Mar/19 01:43


Thanks [eyang](#) and [wilfreds](#)!

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 [Prabhu Joseph](#)

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 [Prabhu Joseph](#)

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Created:

04/Mar/19 05:04

Updated:

08/Jul/20 14:25

Resolved:

07/Mar/19 21:49