Hadoop YARN / YARN-7382

NoSuchElementException in FairScheduler after failover causes RM crash

▾ Details

Type:	🔴 Bug	Status:	**RESOLVED**
Priority:	⛔ Blocker	Resolution:	Fixed
Affects Version/s:	2.9.0, 3.0.0	Fix Version/s:	2.9.0, 3.0.0
Component/s:	fairscheduler		
Labels:	None		
Target Version/s:	2.9.0, 3.0.0		
Hadoop Flags:	Reviewed		

▾ Description

While running an MR job (e.g. sleep) and an RM failover occurs, once the maps gets to 100%, the now active RM will crash due to:

```
2017-10-18 15:02:05,347 INFO org.apache.hadoop.yarn.server.resourcemanager.rmcontainer.RMContainerImpl: container_1508361403235_
2017-10-18 15:02:05,347 INFO org.apache.hadoop.yarn.server.resourcemanager.RMAuditLogger: USER=systest  OPERATION=AM Released C
2017-10-18 15:02:05,349 FATAL org.apache.hadoop.yarn.event.EventDispatcher: Error in handling event type NODE_UPDATE to the Even
java.util.NoSuchElementException
        at java.util.concurrent.ConcurrentSkipListMap.firstKey(ConcurrentSkipListMap.java:2036)
        at java.util.concurrent.ConcurrentSkipListSet.first(ConcurrentSkipListSet.java:396)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.AppSchedulingInfo.getNextPendingAsk(AppSchedulingInfo.java:3
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FSAppAttempt.isOverAMShareLimit(FSAppAttempt.java:901)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FSAppAttempt.assignContainer(FSAppAttempt.java:1326)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FSLeafQueue.assignContainer(FSLeafQueue.java:371)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FSParentQueue.assignContainer(FSParentQueue.java:221)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FSParentQueue.assignContainer(FSParentQueue.java:221)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FairScheduler.attemptScheduling(FairScheduler.java:1019
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FairScheduler.nodeUpdate(FairScheduler.java:887)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FairScheduler.handle(FairScheduler.java:1104)
        at org.apache.hadoop.yarn.server.resourcemanager.scheduler.fair.FairScheduler.handle(FairScheduler.java:128)
        at org.apache.hadoop.yarn.event.EventDispatcher$EventProcessor.run(EventDispatcher.java:66)
        at java.lang.Thread.run(Thread.java:748)
2017-10-18 15:02:05,360 INFO org.apache.hadoop.yarn.event.EventDispatcher: Exiting, bbye..
```

This leaves the cluster with no RMs!

▾ Attachments

📄 YARN-7382.001.patch	6 kB	23/Oct/17 23:38

▾ Issue Links

relates to

🔴 YARN-9552 FairScheduler: NODE_UPDATE can cause NoSuchElementException	⏫	**RESOLVED**

▾ Activity

⬆

▾ ◔ Robert Kanter added a comment - 23/Oct/17 23:41

The 001 patch fixes the problem by marking that the first container is the AM earlier, during recovery, than it had been doing before. That prevents it from getting into the state where it tries to get the first key while `schedulerKeys` is empty. I verified this manually in a cluster and also updated a unit test, where the resources used by the AM weren't being reported correctly before.

▾ ◔ Arun Suresh added a comment - 24/Oct/17 00:51

Thanks for raising this rkanter and for the patch.

looks straight forward.

+1 pending jenkins

⌄ ◉ Hadoop QA added a comment - 24/Oct/17 07:24

❌ -1 overall

Vote	Subsystem	Runtime	Comment
0	reexec	9m 51s	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
+1	mvninstall	15m 21s	trunk passed
+1	compile	0m 41s	trunk passed
+1	checkstyle	0m 27s	trunk passed
+1	mvnsite	0m 40s	trunk passed
+1	shadedclient	9m 50s	branch has no errors when building and testing our client artifacts.
+1	findbugs	1m 3s	trunk passed
+1	javadoc	0m 22s	trunk passed
			Patch Compile Tests
+1	mvninstall	0m 32s	the patch passed
+1	compile	0m 37s	the patch passed
+1	javac	0m 37s	the patch passed
+1	checkstyle	0m 24s	the patch passed
+1	mvnsite	0m 42s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	shadedclient	9m 57s	patch has no errors when building and testing our client artifacts.
+1	findbugs	1m 18s	the patch passed
+1	javadoc	0m 24s	the patch passed
			Other Tests
-1	unit	47m 11s	hadoop-yarn-server-resourcemanager in the patch failed.
+1	asflicense	0m 22s	The patch does not generate ASF License warnings.
		99m 57s	

Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.scheduler.fair.TestFairScheduler
	hadoop.yarn.server.resourcemanager.scheduler.fair.TestFSLeafQueue

Subsystem	Report/Notes
Docker	Image:yetus/hadoop:ca8ddc6
JIRA Issue	YARN-7382
JIRA Patch URL	https://issues.apache.org/jira/secure/attachment/12893630/YARN-7382.001.patch

Optional Tests	asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux e2ed7cd8cf66 3.13.0-123-generic #172-Ubuntu SMP Mon Jun 26 18:04:35 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/hadoop/patchprocess/precommit/personality/provided.sh
git revision	trunk / b90750c
maven	version: Apache Maven 3.3.9
Default Java	1.8.0_131
findbugs	v3.1.0-RC1
unit	https://builds.apache.org/job/PreCommit-YARN-Build/18099/artifact/patchprocess/patch-unit-hadoop-yarn-project_hadoop-yarn_hadoop-yarn-server_hadoop-yarn-server-resourcemanager.txt
Test Results	https://builds.apache.org/job/PreCommit-YARN-Build/18099/testReport/
modules	C: hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager U: hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager
Console output	https://builds.apache.org/job/PreCommit-YARN-Build/18099/console
Powered by	Apache Yetus 0.6.0-SNAPSHOT http://yetus.apache.org

This message was automatically generated.

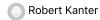⌄ ◯ Robert Kanter added a comment - 24/Oct/17 17:03 - edited

Test failures occur even without the patch. I've filed YARN-7385.

⌄ ◯ Robert Kanter added a comment - 24/Oct/17 17:32

Thanks asuresh for the review. Committed to trunk, branch-3.0, and branch-2!

⌄ People

Assignee:

◯ Robert Kanter

Reporter:

◯ Robert Kanter

Votes:

0 Vote for this issue

Watchers:

3 Start watching this issue

⌄ Dates

Created:

23/Oct/17 23:36

Updated:

14/May/19 09:08

Resolved:

24/Oct/17 17:32