Hadoop YARN / YARN-8858

CapacityScheduler should respect maximum node resource when per-queue maximum-allocation is being used.

⌄ Details

Type:	🔲 Bug		Status:	**RESOLVED**
Priority:	≫ Major		Resolution:	Fixed
Affects Version/s:	None		Fix Version/s:	2.10.0, 3.2.0, 2.9.2, 3.0.4, ⋯ (3)
Component/s:	None			
Labels:	None			
Target Version/s:	2.10.0, 3.2.0, 2.9.2, 3.0.4, 3.1.2, 2.8.6			

⌄ Description

This issue happens after ~~YARN-8720~~.

Before that, AMS uses scheduler.getMaximumAllocation to do the normalization. After that, AMS uses LeafQueue.getMaximumAllocation. The scheduler one uses nodeTracker.getMaximumAllocation, but the LeafQueue.getMaximum doesn't.

We should use the scheduler.getMaximumAllocation to cap the per-queue's maximum-allocation every time.

⌄ Attachments

📄 YARN-8858.001.patch	10 kB	09/Oct/18 05:38
📄 YARN-8858.002.patch	8 kB	09/Oct/18 20:37
📄 YARN-8858-branch-2.8.001.patch	6 kB	10/Oct/18 02:52
📄 YARN-8858-branch-2.8.002.patch	7 kB	05/Nov/18 15:29

⌄ Issue Links

is caused by

🔲 YARN-8720 CapacityScheduler does not enforce max resource allocation check at queue level   ≫ **RESOLVED**

⌄ Activity

↑

⌄ ⊙ Wangda Tan added a comment - 09/Oct/18 05:38 - edited

cheersyang / sunil.govind@gmail.com, can we get this patch committed to 3.2.0? ~~YARN-8720~~ introduced minor behavior change, we should fix it if possible.

⌄ ⊙ Weiwei Yang added a comment - 09/Oct/18 06:24 - edited

Patch looks good to me, pending on jenkins.

⌄ ⊙ Hadoop QA added a comment - 09/Oct/18 11:39

❌ -1 overall

Vote	Subsystem	Runtime	Comment
0	reexec	0m 19s	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 3 new or modified test files.
			trunk Compile Tests
+1	mvninstall	20m 12s	trunk passed
+1	compile	0m 44s	trunk passed
+1	checkstyle	0m 39s	trunk passed
+1	mvnsite	0m 52s	trunk passed
+1	shadedclient	12m 56s	branch has no errors when building and testing our client artifacts.
+1	findbugs	1m 15s	trunk passed
+1	javadoc	0m 29s	trunk passed
			Patch Compile Tests
+1	mvninstall	0m 45s	the patch passed
+1	compile	0m 41s	the patch passed
+1	javac	0m 41s	the patch passed
-0	checkstyle	0m 35s	hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager: The patch generated 5 new + 158 unchanged - 0 fixed = 163 total (was 158)
+1	mvnsite	0m 43s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	shadedclient	12m 43s	patch has no errors when building and testing our client artifacts.
+1	findbugs	1m 33s	the patch passed
+1	javadoc	0m 31s	the patch passed
			Other Tests
-1	unit	85m 48s	hadoop-yarn-server-resourcemanager in the patch failed.
+1	asflicense	0m 26s	The patch does not generate ASF License warnings.
		140m 48s	

Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.TestKillApplicationWithRMHA
	hadoop.yarn.server.resourcemanager.rmapp.TestApplicationLifetimeMonitor

Subsystem	Report/Notes
Docker	Client=17.05.0-ce Server=17.05.0-ce Image:yetus/hadoop:4b8c2b1
JIRA Issue	YARN-8858
JIRA Patch URL	https://issues.apache.org/jira/secure/attachment/12942962/YARN-8858.001.patch
Optional Tests	dupname asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux 5167415159e8 3.13.0-153-generic #203-Ubuntu SMP Thu Jun 14 08:52:28 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/patchprocess/precommit/personality/provided.sh
git revision	trunk / d4626b4
maven	version: Apache Maven 3.3.9
Default Java	1.8.0_181
findbugs	v3.1.0-RC1
checkstyle	https://builds.apache.org/job/PreCommit-YARN-Build/22110/artifact/out/diff-checkstyle-hadoop-yarn-project_hadoop-yarn_hadoop-yarn-server_hadoop-yarn-server-resourcemanager.txt

unit	https://builds.apache.org/job/PreCommit-YARN-Build/22110/artifact/out/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/22110/testReport/
Max. process+thread count	912 (vs. ulimit of 10000)
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/22110/console
Powered by	Apache Yetus 0.8.0 http://yetus.apache.org

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⌄ ◯ Weiwei Yang added a comment - 09/Oct/18 14:26

Hi leftnoteasy

Are the change in `MockAM` and `MockRM` necessary? The UT failure seems related to these changes.

And another minor thing, there is a typo in `CapacityScheduler`, `queueMaxAllocatuin` needs to be replaced by `queueMaxAllocation`.

⌄ ◯ Wangda Tan added a comment - 09/Oct/18 16:55

Thanks cheersyang for the review., they should not be necessary, will update patch later today.

⌄ ◯ Wangda Tan added a comment - 09/Oct/18 20:37

Attached ver.2 patch, addressed all comments.

⌄ ◯ Hadoop QA added a comment - 09/Oct/18 23:08

❌ **-1 overall**

Vote	Subsystem	Runtime	Comment
0	reexec	0m 37s	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	17m 46s	trunk passed
+1	compile	0m 40s	trunk passed
+1	checkstyle	0m 34s	trunk passed
+1	mvnsite	0m 46s	trunk passed
+1	shadedclient	11m 33s	branch has no errors when building and testing our client artifacts.
+1	findbugs	1m 12s	trunk passed
+1	javadoc	0m 26s	trunk passed
			Patch Compile Tests
+1	mvninstall	0m 45s	the patch passed
+1	compile	0m 40s	the patch passed
+1	javac	0m 40s	the patch passed
-0	checkstyle	0m 31s	hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager: The patch generated 5 new + 106 unchanged - 0 fixed = 111 total (was 106)

+1	mvnsite	0m 43s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	shadedclient	11m 23s	patch has no errors when building and testing our client artifacts.
+1	findbugs	1m 16s	the patch passed
+1	javadoc	0m 23s	the patch passed
			Other Tests
-1	unit	100m 9s	hadoop-yarn-server-resourcemanager in the patch failed.
+1	asflicense	0m 23s	The patch does not generate ASF License warnings.
		149m 35s	

Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.scheduler.TestAbstractYarnScheduler
	hadoop.yarn.server.resourcemanager.TestRMEmbeddedElector

Subsystem	Report/Notes
Docker	Client=17.05.0-ce Server=17.05.0-ce Image:yetus/hadoop:4b8c2b1
JIRA Issue	YARN-8858
JIRA Patch URL	https://issues.apache.org/jira/secure/attachment/12943105/YARN-8858.002.patch
Optional Tests	dupname asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux bc461f70357c 4.4.0-133-generic #159-Ubuntu SMP Fri Aug 10 07:31:43 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/patchprocess/precommit/personality/provided.sh
git revision	trunk / bf04f19
maven	version: Apache Maven 3.3.9
Default Java	1.8.0_181
findbugs	v3.1.0-RC1
checkstyle	https://builds.apache.org/job/PreCommit-YARN-Build/22118/artifact/out/diff-checkstyle-hadoop-yarn-project_hadoop-yarn_hadoop-yarn-server_hadoop-yarn-server-resourcemanager.txt
unit	https://builds.apache.org/job/PreCommit-YARN-Build/22118/artifact/out/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/22118/testReport/
Max. process+thread count	955 (vs. ulimit of 10000)
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/22118/console
Powered by	Apache Yetus 0.8.0 http://yetus.apache.org

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Weiwei Yang added a comment - 10/Oct/18 01:26 - edited

+1. The UT failure should not be related. I applied the patch and tested locally, they work fine. I will commit this shortly. BTW, the checksytle issues were caused by some unused imports in the test class, I will remove them during the commit.

Hudson added a comment - 10/Oct/18 02:20

SUCCESS: Integrated in Jenkins build Hadoop-trunk-Commit #15164 (See https://builds.apache.org/job/Hadoop-trunk-Commit/15164/)

YARN-8858. CapacityScheduler should respect maximum node resource when (wwei: rev edce866489d83744f3f47a3b884b0c6136885e4a)

- (edit) hadoop-yarn-project/hadoop-yarn/hadoop-yarn-server/hadoop-yarn-server-resourcemanager/src/main/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/ClusterNodeTracker.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/test/java/org/apache/hadoop/yarn/server/resourcemanager/scheduler/capacity/TestContainerAllocation.java

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Weiwei Yang added a comment - 10/Oct/18 02:52

Hi leftnoteasy

I have committed the patch to trunk, cherry-picked to branch-3.2, branch-3.1, branch-3.0, branch-2, branch-2.9.

Weiwei Yang added a comment - 10/Oct/18 02:54

Hi leftnoteasy, the patch has conflict to branch-2.8, could you pls take a look at the patch I just uploaded for branch-2.8, and let me know if that is good to port back to that branch. Thanks.

Hadoop QA added a comment - 10/Oct/18 05:49

❌ -1 overall

Vote	Subsystem	Runtime	Comment
0	reexec	17m 8s	Docker mode activated.
			Prechecks
0	findbugs	0m 1s	Findbugs executables are not available.
+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.
			branch-2.8 Compile Tests
+1	mvninstall	10m 5s	branch-2.8 passed
+1	compile	0m 34s	branch-2.8 passed
+1	checkstyle	0m 22s	branch-2.8 passed
+1	mvnsite	0m 46s	branch-2.8 passed
+1	javadoc	0m 32s	branch-2.8 passed
			Patch Compile Tests
+1	mvninstall	0m 36s	the patch passed
+1	compile	0m 36s	the patch passed
+1	javac	0m 36s	the patch passed
+1	checkstyle	0m 18s	the patch passed
+1	mvnsite	0m 39s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	javadoc	0m 24s	the patch passed
			Other Tests
-1	unit	82m 56s	hadoop-yarn-server-resourcemanager in the patch failed.
-1	asflicense	0m 19s	The patch generated 1 ASF License warnings.
		116m 6s	

Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.TestClientRMTokens
	hadoop.yarn.server.resourcemanager.TestAMAuthorization
	hadoop.yarn.server.resourcemanager.scheduler.capacity.TestContainerAllocation

Subsystem	Report/Notes
Docker	Client=17.05.0-ce Server=17.05.0-ce Image:yetus/hadoop:ae3769f
JIRA Issue	~~YARN-8858~~
JIRA Patch URL	https://issues.apache.org/jira/secure/attachment/12943159/YARN-8858-branch-2.8.001.patch
Optional Tests	dupname asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux cd1bdee5529b 3.13.0-153-generic #203-Ubuntu SMP Thu Jun 14 08:52:28 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/patchprocess/precommit/personality/provided.sh
git revision	branch-2.8 / 94f4b5b
maven	version: Apache Maven 3.0.5
Default Java	1.7.0_181
unit	https://builds.apache.org/job/PreCommit-YARN-Build/22128/artifact/out/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/22128/testReport/
asflicense	https://builds.apache.org/job/PreCommit-YARN-Build/22128/artifact/out/patch-asflicense-problems.txt
Max. process+thread count	668 (vs. ulimit of 10000)
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/22128/console
Powered by	Apache Yetus 0.8.0 http://yetus.apache.org

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Sunil G added a comment - 15/Oct/18 10:11

Bumping down priority to Major as it is committed in majority of branches.

Akira Ajisaka added a comment - 05/Nov/18 05:04

Hi cheersyang, the added regression test in the patch for branch-2.8 is failing. Would you fix it?

Weiwei Yang added a comment - 05/Nov/18 15:30 - edited

Thanks ajisakaa for the reminder, this one got slipped from my list. I just uploaded v2 patch for branch-2.8 to fix the UT. BTW, when I fix this, I think testContainerRejectionWhenAskBeyondDynamicMax might be flaky, I will create another ticket to fix on rest of branches.

Hadoop QA added a comment - 05/Nov/18 17:08

❌ -1 overall

Vote	Subsystem	Runtime	Comment
0	reexec	0m 26s	Docker mode activated.

			Prechecks
0	findbugs	0m 0s	Findbugs executables are not available.
+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.
			branch-2.8 Compile Tests
+1	mvninstall	7m 38s	branch-2.8 passed
+1	compile	0m 37s	branch-2.8 passed
+1	checkstyle	0m 22s	branch-2.8 passed
+1	mvnsite	0m 44s	branch-2.8 passed
+1	javadoc	0m 30s	branch-2.8 passed
			Patch Compile Tests
+1	mvninstall	0m 35s	the patch passed
+1	compile	0m 35s	the patch passed
+1	javac	0m 35s	the patch passed
+1	checkstyle	0m 19s	the patch passed
+1	mvnsite	0m 37s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	javadoc	0m 24s	the patch passed
			Other Tests
-1	unit	83m 44s	hadoop-yarn-server-resourcemanager in the patch failed.
-1	asflicense	0m 21s	The patch generated 1 ASF License warnings.
		97m 46s	

Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.TestClientRMTokens
	hadoop.yarn.server.resourcemanager.TestAMAuthorization
	hadoop.yarn.server.resourcemanager.scheduler.capacity.TestCapacitySchedulerSurgicalPreemption

Subsystem	Report/Notes
Docker	Client=17.05.0-ce Server=17.05.0-ce Image:yetus/hadoop:ae3769f
JIRA Issue	YARN-8858
JIRA Patch URL	https://issues.apache.org/jira/secure/attachment/12946925/YARN-8858-branch-2.8.002.patch
Optional Tests	dupname asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux 2880aaaa70e3 3.13.0-153-generic #203-Ubuntu SMP Thu Jun 14 08:52:28 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/patchprocess/precommit/personality/provided.sh
git revision	branch-2.8 / 3d76d47
maven	version: Apache Maven 3.0.5
Default Java	1.7.0_181
unit	https://builds.apache.org/job/PreCommit-YARN-Build/22416/artifact/out/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/22416/testReport/
asflicense	https://builds.apache.org/job/PreCommit-YARN-Build/22416/artifact/out/patch-asflicense-problems.txt

Max. process+thread count	670 (vs. ulimit of 10000)
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/22416/console
Powered by	Apache Yetus 0.8.0 http://yetus.apache.org

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Wangda Tan added a comment - 05/Nov/18 18:40

Triggered Jenkins build to find flaky tests.

Hadoop QA added a comment - 05/Nov/18 20:18

❌ **-1 overall**

Vote	Subsystem	Runtime	Comment
0	reexec	0m 23s	Docker mode activated.
			Prechecks
0	findbugs	0m 0s	Findbugs executables are not available.
+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.
			branch-2.8 Compile Tests
+1	mvninstall	9m 42s	branch-2.8 passed
+1	compile	0m 35s	branch-2.8 passed
+1	checkstyle	0m 22s	branch-2.8 passed
+1	mvnsite	0m 42s	branch-2.8 passed
+1	javadoc	0m 28s	branch-2.8 passed
			Patch Compile Tests
+1	mvninstall	0m 33s	the patch passed
+1	compile	0m 32s	the patch passed
+1	javac	0m 32s	the patch passed
+1	checkstyle	0m 18s	the patch passed
+1	mvnsite	0m 36s	the patch passed
+1	whitespace	0m 0s	The patch has no whitespace issues.
+1	javadoc	0m 24s	the patch passed
			Other Tests
-1	unit	82m 35s	hadoop-yarn-server-resourcemanager in the patch failed.
-1	asflicense	0m 21s	The patch generated 1 ASF License warnings.
		98m 24s	

Reason	Tests
Failed junit tests	hadoop.yarn.server.resourcemanager.TestClientRMTokens
	hadoop.yarn.server.resourcemanager.TestAMAuthorization
	hadoop.yarn.server.resourcemanager.scheduler.capacity.TestCapacitySchedulerSurgicalPreemption

Subsystem	Report/Notes
Docker	Client=17.05.0-ce Server=17.05.0-ce Image:yetus/hadoop:ae3769f
JIRA Issue	YARN-8858
JIRA Patch URL	https://issues.apache.org/jira/secure/attachment/12946925/YARN-8858-branch-2.8.002.patch
Optional Tests	dupname asflicense compile javac javadoc mvninstall mvnsite unit shadedclient findbugs checkstyle
uname	Linux 2af3c1dbaa4c 3.13.0-153-generic #203-Ubuntu SMP Thu Jun 14 08:52:28 UTC 2018 x86_64 x86_64 x86_64 GNU/Linux
Build tool	maven
Personality	/testptch/patchprocess/precommit/personality/provided.sh
git revision	branch-2.8 / 3d76d47
maven	version: Apache Maven 3.0.5
Default Java	1.7.0_181
unit	https://builds.apache.org/job/PreCommit-YARN-Build/22417/artifact/out/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/22417/testReport/
asflicense	https://builds.apache.org/job/PreCommit-YARN-Build/22417/artifact/out/patch-asflicense-problems.txt
Max. process+thread count	634 (vs. ulimit of 10000)
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/22417/console
Powered by	Apache Yetus 0.8.0 http://yetus.apache.org

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ⓥ ◯ **Akira Ajisaka** added a comment - 06/Nov/18 02:14

The new UT looks good. +1, thanks cheersyang.

ⓥ ◯ **Akira Ajisaka** added a comment - 06/Nov/18 06:18

The failed tests are not related to the patch. Committing this.

ⓥ ◯ **Akira Ajisaka** added a comment - 06/Nov/18 06:20

Committed this to branch-2.8. Thanks leftnoteasy and cheersyang!

ⓥ ◯ **Wangda Tan** added a comment - 06/Nov/18 06:43

Thanks cheersyang / ajisakaa for rebasing and committing the patch!

ⓥ ◯ **Weiwei Yang** added a comment - 06/Nov/18 06:44

Thanks ajisakaa for the help!

ⓥ **People**

Assignee:

◯ Wangda Tan

Reporter:

◯ Sumana Sathish

Votes:

◯ Vote for this issue

Watchers:

8 Start watching this issue

∨ **Dates**
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Created:

09/Oct/18 05:37

Updated:

06/Nov/18 06:44

Resolved:

06/Nov/18 06:20