Hadoop Common / HADOOP-2044

Namenode encounters ClassCastException exceptions for INodeFileUnderConstruction

Details

Type:	🟥 Bug	Status:	**CLOSED**
Priority:	⛔ Blocker	Resolution:	Fixed
Affects Version/s:	None	Fix Version/s:	0.15.0
Component/s:	None		
Labels:	None		

Description

A distcp command running on one 400 node cluster shows this exception:

org.apache.hadoop.fs.FSNamesystem: Removing lease [Lease. Holder: 44 46 53 43 6c 69 65 6e 74 5f 74 61 73 6b 5f 32 30 30 37 31 30 31 31 32 32 35 37 5f 30 30 30 33 5f 6d 5f 30 30 30 30 39 32 5f 30, heldlocks: 0, pendingcreates: 0], leases remaining: 736
org.apache.hadoop.dfs.StateChange: DIR* NameSystem.internalReleaseCreate: attempt to release a create lock on /user/xxxx/logs_21/_task_200710112257_0003_m_000027_0/part-00027 file does not exist.
org.apache.hadoop.fs.FSNamesystem: Removing lease [Lease. Holder: 44 46 53 43 6c 69 65 6e 74 5f 74 61 73 6b 5f 32 30 30 37 31 30 31 31 32 32 35 37 5f 30 30 30 33 5f 6d 5f 30 30 30 32 37 5f 30, heldlocks: 0, pendingcreates: 0], leases remaining: 735
org.apache.hadoop.fs.FSNamesystem: java.lang.ClassCastException: org.apache.hadoop.dfs.INodeFile cannot be cast to org.apache.hadoop.dfs.INodeFileUnderConstruction
at org.apache.hadoop.dfs.FSNamesystem.internalReleaseCreate(FSNamesystem.java:1566)
at org.apache.hadoop.dfs.FSNamesystem.access$100(FSNamesystem.java:51)
at org.apache.hadoop.dfs.FSNamesystem$Lease.releaseLocks(FSNamesystem.java:1463)
at org.apache.hadoop.dfs.FSNamesystem$LeaseMonitor.run(FSNamesystem.java:1525)
at java.lang.Thread.run(Thread.java:619)

Attachments

📄 InodeClassException2.patch		7 kB	16/Oct/07 00:01

Activity

⬤ Dhruba Borthakur created issue – 12/Oct/07 19:54

⬤ Dhruba Borthakur added a comment – 12/Oct/07 20:39

I am marking this as a blocker for 0.15 unless proven otherwise.

⬤ Dhruba Borthakur made changes – 12/Oct/07 20:39

Field	Original Value	New Value
Fix Version/s		0.15.0 [12312565]

⬤ Dhruba Borthakur made changes – 12/Oct/07 20:39

Field	Original Value	New Value
Priority	Major [3]	Blocker [1]

⬤ Dhruba Borthakur made changes – 12/Oct/07 21:29

Field	Original Value	New Value
Attachment		InodeClassException.patch [12367660]

⬤ Konstantin Shvachko added a comment – 15/Oct/07 21:35

The patch fixes 2 important bugs:

1. access and modification of FSNamesystem.sortedLeases should be synchronized (under a lock, which is different from the global FSNamesystem lock).
   The bug was that startFileInternal() modified sortedLeases with the global lock but without the leases lock.
2. completeFile() or getAdditionalBlock() cannot rely on that they always deal with a file under construction, because if client fails to remove the lease,
   the file is automatically converted into a regular file, and modifications of such files are not allowed.

I have 2 comments, which do not address the correctness of the patch but rather intended to make code more understandable.

1. instead of using the "instaceof INodeFileUnderConstruction" operator it is better to define an virtual method INode.isFileUnderConstruction().
2. All modifications of the FSNamesystem.leases member are performed under the global FSNamesystem lock.
   While modifications of FSNamesystem.sortedLeases are done under the lock associated with the FSNamesystem.leases, which
   is correct but unintuitive. I'd propose to replace all

```
synchronized (leases) {}
```

sections by

```
synchronized (sortedLeases) {}
```

Dhruba Borthakur added a comment - 16/Oct/07 00:01

Incorporated Konstantin's suggestions.

Dhruba Borthakur made changes - 16/Oct/07 00:01

Attachment		InodeClassException2.patch [12367789]

Dhruba Borthakur made changes - 16/Oct/07 00:01

Attachment	InodeClassException.patch [12367660]

Dhruba Borthakur added a comment - 16/Oct/07 00:03

I would like the automatic testing from HadoopQA in parallel with getting another round of feedback from Konstantin. Hence marking this as patch available.

Dhruba Borthakur made changes - 16/Oct/07 00:03

Status	Open [1]		Patch Available [10002]

Hadoop QA added a comment - 16/Oct/07 01:48

+1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12367789/InodeClassException2.patch
against trunk revision r584939.

@author +1. The patch does not contain any @author tags.

javadoc +1. The javadoc tool did not generate any warning messages.

javac +1. The applied patch does not generate any new compiler warnings.

findbugs +1. The patch does not introduce any new Findbugs warnings.

core tests +1. The patch passed core unit tests.

contrib tests +1. The patch passed contrib unit tests.

Test results: http://lucene.zones.apache.org:8080/hudson/job/Hadoop-Patch/950/testReport/
Findbugs warnings: http://lucene.zones.apache.org:8080/hudson/job/Hadoop-Patch/950/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://lucene.zones.apache.org:8080/hudson/job/Hadoop-Patch/950/artifact/trunk/build/test/checkstyle-errors.html
Console output: http://lucene.zones.apache.org:8080/hudson/job/Hadoop-Patch/950/console

This message is automatically generated.

Konstantin Shvachko added a comment - 16/Oct/07 21:58

+1

Hudson added a comment - 17/Oct/07 12:07

Integrated in Hadoop-Nightly #275 (See http://lucene.zones.apache.org:8080/hudson/job/Hadoop-Nightly/275/)

Dhruba Borthakur added a comment - 17/Oct/07 17:37

I just committed this.

Dhruba Borthakur made changes - 17/Oct/07 17:37

Resolution		Fixed [1]	
Status	Patch Available [10002]	Resolved [5]	

Doug Cutting made changes - 05/Nov/07 18:13

Status	Resolved [5]	Closed [6]	

Owen O'Malley made changes - 08/Jul/09 16:42

Component/s	dfs [12310710]

Transition	Time In Source Status	Execution Times
Dhruba Borthakur made transition - 16/Oct/07 00:03 OPEN ➡ PATCH AVAILABLE	3d 4h 8m	1
Dhruba Borthakur made transition - 17/Oct/07 17:37 PATCH AVAILABLE ➡ RESOLVED	1d 17h 34m	1
Doug Cutting made transition - 05/Nov/07 18:13 RESOLVED ➡ CLOSED	19d 35m	1

People

Assignee:

Dhruba Borthakur

Reporter:

Dhruba Borthakur

Votes:

0 Vote for this issue

Watchers:

0 Start watching this issue

Dates

Created:

12/Oct/07 19:54

Updated:

08/Jul/09 16:42

Resolved:

17/Oct/07 17:37