Public signup for this instance is **disabled**. Our Jira Guidelines page explains how to get an account.

Hadoop Common / HADOOP-3382

Memory leak when files are not cleanly closed

Details

Type:	Bug		Status:	**CLOSED**
Priority:	Blocker		Resolution:	Fixed
Affects Version/s:	0.15.0		Fix Version/s:	0.17.0
Component/s:	None			
Labels:	None			
Hadoop Flags:	Reviewed			
Release Note:	Fixed a memory leak associated with 'abandoned' files (i.e. not cleanly closed). This held up significant amounts of memory depending on activity and how long NameNode has been running.			

Description

`FSNamesystem.internalReleaseCreate()` in invoked on files that are open for writing but not cleanly closed. e.g. when client invokes `abandonFileInProgress()` or when lease expires. It deletes the last block if it has a length of zero. The block is deleted from the file INode but not from `blocksMap`. Then leaves a reference to such file until NameNode is restarted. When this happens ~~HADOOP-3381~~ multiplies amount of memory leak.

Attachments

📄 HADOOP-3382.patch	1 kB	14/May/08 18:16
📄 HADOOP-3382.patch	0.7 kB	14/May/08 07:44
📄 HADOOP-3382.patch	0.7 kB	14/May/08 07:42
📄 memleak.txt	2 kB	13/May/08 21:59

Activity

↑

Raghu Angadi created issue - 13/May/08 18:40

⌄ Tsz-wo Sze added a comment - 13/May/08 20:53

abandonFileInProgress() in ClientProtocol is deprecated. We should remove it as well.

⌄ Raghu Angadi added a comment - 13/May/08 21:59

memleak.txt attached.

Koji confirmed that this leak exists and it could lead to many other INode objects to leak, using a simple one node cluster and manually inturrupting writing one of the files.

Raghu Angadi made changes - 13/May/08 21:59

Field	Original Value	New Value
Attachment		memleak.txt [12381989]

⌄ Robert Chansler added a comment - 13/May/08 23:17

0.17 won't be good enough for the big grids without this.

Robert Chansler made changes - 13/May/08 23:17

Fix Version/s		0.17.0 [12312913]
Description	{{FSNamesystem.internalReleaseCreate()}} in	{{FSNamesystem.internalReleaseCreate()}} in invoked on files that are open for writing but not

	invoked on files that are open for writing but not cleanly closed. e.g. when client invokes {{abandonFileInProgress()}} or when lease expires. It deletes the last block if it has a length of zero. The block is deleted from the file INode but not from {{blocksMap}}. Then leaves a reference to such file until NameNode is restarted. When this happens ~~HADOOP-3381~~ multiplies amount of memory leak.	cleanly closed. e.g. when client invokes {{abandonFileInProgress()}} or when lease expires. It deletes the last block if it has a length of zero. The block is deleted from the file INode but not from {{blocksMap}}. Then leaves a reference to such file until NameNode is restarted. When this happens ~~HADOOP-3381~~ multiplies amount of memory leak.
Priority	Major [3]	Blocker [1]

🔽 😊 **Raghu Angadi** added a comment - 14/May/08 07:42 - *edited*

The patch that is tested manually is attached. As my comment in the patch describes, we do different things when a block is removed in different context. What is done a block is removed from NameNode should be in one place. This patch only fixes the observed leak.

I was thinking of writing unit test using abandonFileInProgress() but it is already deprecated. Since it is fairly simple patch and tested manually, it is probably ok not to have a unit test.

😊 **Raghu Angadi** made changes - 14/May/08 07:42

Attachment	HADOOP-3382.patch [12382015]

😊 **Raghu Angadi** made changes - 14/May/08 07:44

Attachment	HADOOP-3382.patch [12382016]

😊 **Raghu Angadi** made changes - 14/May/08 07:45

Status	Open [1]	Patch Available [10002]

🔽 ⚪ **Hadoop QA** added a comment - 14/May/08 10:53

-1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12382016/HADOOP-3382.patch
against trunk revision 656153.

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

-1 tests included. The patch doesn't appear to include any new or modified tests.
Please justify why no tests are needed for this patch.

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

+1 javac. The applied patch does not increase the total number of javac compiler warnings.

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

+1 release audit. The applied patch does not increase the total number of release audit warnings.

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

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

Test results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2463/testReport/
Findbugs warnings: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2463/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2463/artifact/trunk/build/test/checkstyle-errors.html
Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2463/console

This message is automatically generated.

🔽 😊 **Raghu Angadi** added a comment - 14/May/08 16:01

Thanks to Koji for helping the investigation and verification of the fix.

🔽 ⚪ **Tsz-wo Sze** added a comment - 14/May/08 17:18

I guess ~~HADOOP-3382~~.patch is for 0.16. Should we also remove all datanodes from BlockInfo?

Tsz-wo Sze added a comment - 14/May/08 17:51

created HADOOP-3390 to remove ClientProtocol.abandonFileInProgress()

Raghu Angadi added a comment - 14/May/08 17:57 - *edited*

> Should we also remove all datanodes from BlockInfo?
Possibly. Please see my comment in the code and in jira above. There is no explicit and/or consistent policy regd what needs to be cleaned up. I didn't want to fix that in this jira.

Pretty much in all these cases datanodes would not completed the block. I will add cleaning up the datanodes part.

Raghu Angadi added a comment - 14/May/08 18:16

Updated patch adds block to invalidated blocks for any datanodes that have this block. Ideally processBlockReport should handle this. When it iterates, if a block does not have any file associated with it, it should be removed.

Raghu Angadi made changes - 14/May/08 18:16

Attachment	HADOOP-3382.patch [12382065]

Tsz-wo Sze added a comment - 14/May/08 18:21

+1 patch looks good

Tsz-wo Sze made changes - 14/May/08 18:21

Hadoop Flags	[Reviewed]

Raghu Angadi made changes - 14/May/08 18:29

Status	Patch Available [10002]	Open [1]

Raghu Angadi made changes - 14/May/08 18:29

Status	Open [1]	Patch Available [10002]

Hadoop QA added a comment - 14/May/08 21:45

-1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12382065/HADOOP-3382.patch
against trunk revision 656270.

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

-1 tests included. The patch doesn't appear to include any new or modified tests.
Please justify why no tests are needed for this patch.

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

+1 javac. The applied patch does not increase the total number of javac compiler warnings.

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

+1 release audit. The applied patch does not increase the total number of release audit warnings.

-1 core tests. The patch failed core unit tests.

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

Test results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2469/testReport/
Findbugs warnings: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2469/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2469/artifact/trunk/build/test/checkstyle-errors.html
Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2469/console

This message is automatically generated.

Raghu Angadi added a comment - 14/May/08 23:00

TestMiniMRBingUp failes. This is very simple test and does not even use DFS. The failure seems to another case of HADOOP-3354 (thanks Lohit). I think this patch can be committed.

Raghu Angadi made changes - 14/May/08 23:26

Status	Patch Available [10002]	Open [1]

Raghu Angadi made changes - 14/May/08 23:26

Status	Open [1]	Patch Available [10002]

Raghu Angadi added a comment - 14/May/08 23:48

I just committed this.

Raghu Angadi made changes - 14/May/08 23:48

Release Note		Fixed a memory leak associated with 'abandoned' files (i.e. not cleanly closed). This held up significant amounts of memory depending on activity and how long NameNode has been running.
Affects Version/s		0.15.0 [12312565]
Affects Version/s	0.16.0 [12312740]	

Hadoop QA added a comment - 15/May/08 02:11

-1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12382065/HADOOP-3382.patch
against trunk revision 656480.

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

-1 tests included. The patch doesn't appear to include any new or modified tests.
Please justify why no tests are needed for this patch.

-1 patch. The patch command could not apply the patch.

Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/2474/console

This message is automatically generated.

Hudson added a comment - 15/May/08 12:43

Integrated in Hadoop-trunk #492 (See http://hudson.zones.apache.org/hudson/job/Hadoop-trunk/492/)

Raghu Angadi made changes - 15/May/08 18:33

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

Nigel Daley made changes - 21/May/08 20:06

Status	Resolved [5]	Closed [6]

Owen O'Malley made changes - 08/Jul/09 16:43

Component/s	dfs [12310710]

Transition	Time In Source Status	Execution Times
Raghu Angadi made transition - 14/May/08 23:26		
PATCH AVAILABLE ➡ OPEN	15h 40m	2
Raghu Angadi made transition - 14/May/08 23:26		
OPEN ➡ PATCH AVAILABLE	13h 4m	3
Raghu Angadi made transition - 15/May/08 18:33		
PATCH AVAILABLE ➡ RESOLVED	19h 7m	1

Nigel Daley made transition - 21/May/08 20:06

| RESOLVED ➡ CLOSED | 6d 1h 32m | 1 |

⌄ People

Assignee:

😊 Raghu Angadi

Reporter:

😊 Raghu Angadi

Votes:

0 Vote for this issue

Watchers:

0 Start watching this issue

⌄ Dates

Created:

13/May/08 18:40

Updated:

08/Jul/09 16:43

Resolved:

15/May/08 18:33