Hadoop Common / HADOOP-2768

DFSIO write performance benchmark shows a regression

Details

Type:	🔴 Bug	Status:	**CLOSED**
Priority:	⛔ Blocker	Resolution:	Fixed
Affects Version/s:	0.16.0	Fix Version/s:	0.16.0
Component/s:	None		
Labels:	None		

Description

We are seeing a performance regression in DFSIO write benchmark, possibly due to Hadoop-1707.

Here is the data:

- Aggregate cluster throughput went from 0.30G to 0.14G with 39 concurrent clients, on 20 nodes
- Aggregate cluster throughput went from 1.15G to 0.85G with 39 concurrent clients, on 100 nodes

Attachments

📄 perf.patch	1 kB	01/Feb/08 22:04
📄 perf.patch	2 kB	01/Feb/08 21:58
📄 perf1.patch	3 kB	03/Feb/08 08:57
📄 perf2.patch	3 kB	04/Feb/08 05:09

Activity

⬆

Dhruba Borthakur added a comment - 01/Feb/08 21:58

Datanodes write to local file using a bufferedotputstream

Mukund Madhugiri added a comment - 01/Feb/08 23:12

With the patch, I see a performance improvement:
Aggregate cluster throughput with the patch is at 1.145G on 100 nodes

Raghu Angadi added a comment - 01/Feb/08 23:26

+1.

Yes, this will increase buffer copies. But we intend get rid of copies without changing effective write size for sockets for 0.17 (HADOOP-2154). I went through the same experience with HADOOP-1134, initially didn't have BufferedOutputStream and added it after the benchmarks.

Hadoop QA added a comment - 02/Feb/08 02:17

-1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12374587/perf.patch
against trunk revision 616796.

@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 javac compiler warnings.

release audit +1. The applied patch does not generate any new release audit warnings.

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

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

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

Test results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1725/testReport/
Findbugs warnings: http://hudson.zones.apache.org/hudson/job/Hadoop-
Patch/1725/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1725/artifact/trunk/build/test/checkstyle-errors.html
Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1725/console

This message is automatically generated.

Hadoop QA added a comment - 02/Feb/08 05:43

–1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12374587/perf.patch
against trunk revision 616796.

@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 javac compiler warnings.

release audit +1. The applied patch does not generate any new release audit warnings.

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

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

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

Test results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1727/testReport/
Findbugs warnings: http://hudson.zones.apache.org/hudson/job/Hadoop-
Patch/1727/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1727/artifact/trunk/build/test/checkstyle-errors.html
Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1727/console

This message is automatically generated.

Nigel Daley added a comment - 02/Feb/08 20:19

In both core test runs above, TestBalancer failed with this exception:

```
[junit] 2008-02-02 00:51:29,097 INFO dfs.DataNode (DataNode.java:writeBlock(1169)) – writeBlock
blk_–4006373334377701738 received exception java.io.IOException: setBlockPosition trying to set position to 3 which is
not a multiple of bytesPerChecksum 10
[junit] 2008-02-02 00:51:29,098 ERROR dfs.DataNode (DataNode.java:run(961)) – 127.0.0.1:49578:DataXceiver:
java.io.IOException: setBlockPosition trying to set position to 3 which is not a multiple of bytesPerChecksum 10
[junit] at org.apache.hadoop.dfs.DataNode$BlockReceiver.setBlockPosition(DataNode.java:2301)
[junit] at org.apache.hadoop.dfs.DataNode$BlockReceiver.receivePacket(DataNode.java:2126)
[junit] at org.apache.hadoop.dfs.DataNode$BlockReceiver.receiveBlock(DataNode.java:2230)
[junit] at org.apache.hadoop.dfs.DataNode$DataXceiver.writeBlock(DataNode.java:1150)
[junit] at org.apache.hadoop.dfs.DataNode$DataXceiver.run(DataNode.java:938)
[junit] at java.lang.Thread.run(Thread.java:595)
```

Dhruba Borthakur added a comment - 03/Feb/08 08:55

Failure in unit tests TestBalancer

Dhruba Borthakur added a comment - 03/Feb/08 08:57

Since the datanode started using a bufferoutputstream, the verification that the offset of a packet in the block matches the current
channel offset needed to be modified.

Hadoop QA added a comment - 03/Feb/08 10:34

–1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12374633/perf1.patch

against trunk revision 616796.

@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 javac compiler warnings.

release audit +1. The applied patch does not generate any new release audit warnings.

findbugs -1. The patch appears to introduce 1 new Findbugs warnings.

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

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

Test results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1733/testReport/
Findbugs warnings: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1733/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1733/artifact/trunk/build/test/checkstyle-errors.html
Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1733/console

This message is automatically generated.

Dhruba Borthakur added a comment - 04/Feb/08 05:09

Findbugs warnings

Dhruba Borthakur added a comment - 04/Feb/08 05:09

Fix findbugs warnings

Hadoop QA added a comment - 04/Feb/08 07:25

-1 overall. Here are the results of testing the latest attachment
http://issues.apache.org/jira/secure/attachment/12374659/perf2.patch
against trunk revision 616796.

@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 javac compiler warnings.

release audit +1. The applied patch does not generate any new release audit warnings.

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

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

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

Test results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1735/testReport/
Findbugs warnings: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1735/artifact/trunk/build/test/findbugs/newPatchFindbugsWarnings.html
Checkstyle results: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1735/artifact/trunk/build/test/checkstyle-errors.html
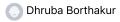Console output: http://hudson.zones.apache.org/hudson/job/Hadoop-Patch/1735/console

This message is automatically generated.

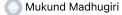Nigel Daley added a comment - 04/Feb/08 18:00

I just committed this. Thanks Dhruba!

People

Assignee:

Dhruba Borthakur

Reporter:

Mukund Madhugiri

Votes:

0 Vote for this issue

Watchers:

0 Start watching this issue

⌄ Dates

Created:

01/Feb/08 18:59

Updated:

08/Jul/09 16:42

Resolved:

04/Feb/08 18:00