

git_comments:

1. Create configuration to use SimulatedFsDatasetVerifier#Factory.
2. This constructor does the actual verification by ensuring that the DatanodeUuid is initialized.
3. * * Test to verify that the DataNode Uuid is correctly initialized before * FsDataSet initialization.
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5. Start a cluster so that SimulatedFsDatasetVerifier constructor is invoked.
6. If this is a newly formatted DataNode then assign a new DatanodeUuid.

git_commits:

1. **summary:** HDFS-5454. Merge r1551296 from trunk to branch-2.
message: HDFS-5454. Merge r1551296 from trunk to branch-2. git-svn-id:
<https://svn.apache.org/repos/asf/hadoop/common/branches/branch-2@1556083> 13f79535-47bb-0310-9956-ffa450edef68

github_issues:**github_issues_comments:****github_pulls:****github_pulls_comments:****github_pulls_reviews:****jira_issues:**

1. **summary:** DataNode UUID should be assigned prior to FsDataset initialization
description: The DataNode's UUID ({{DataStorage.getDatanodeUuid()}} field) is NULL at the point where the {{FsDataset}} object is created ({{DataNode.initStorage()}}). As the {{DataStorage}} object is an input to the {{FsDataset}} factory method, it is desirable for it to be fully populated with a UUID at this point. In particular, our {{FsDatasetSpi}} implementation relies upon the DataNode UUID as a key to access our underlying block storage device. This also appears to be a regression compared to Hadoop 1.x - our 1.x {{FSDatasetInterface}} plugin has a non-NULL UUID on startup. I haven't fully traced through the code, but I suspect this came from the {{BPOfferService}}/{{BPServiceActor}} refactoring to support federated namenodes. With HDFS-5448, the DataNode is now responsible for generating its own UUID. This greatly simplifies the fix. Move the UUID check/generation in from {{DataNode.createBPRegistration()}} to {{DataNode.initStorage()}}. This more naturally co-locates UUID generation immediately subsequent to the read of the UUID from the {{DataStorage}} properties file. {code} private void initStorage(final NamespaceInfo nsInfo) throws IOException { // ... final String bpid = nsInfo.getBlockPoolID(); //read storage info, lock data dirs and transition fs state if necessary storage.recoverTransitionRead(this, bpid, nsInfo, dataDirs, startOpt); // SUGGESTED NEW PLACE TO CHECK DATANODE UUID checkDatanodeUuid(); // ... } {code}

jira_issues_comments:

1. The javadoc for {{DataNode#initStorage}} does not appear to match the code. {code} /** * Initializes the {@link #data}. The initialization is done only once, when * handshake with the the first namenode is completed. */ private void initStorage(final NamespaceInfo nsInfo) throws IOException { {code} However initStorage is invoked before the handshake completes, in {{BPServiceActor#connectToNNAndHandshake}} {code} // Verify that this matches the other NN in this

HA pair. // This also initializes our block pool in the DN if we are // the first NN connection for this BP.
bpos.verifyAndSetNamespaceInfo(nsInfo); <<<--- Calls initStorage. // Second phase of the handshake
with the NN. register(); {code} I am not sure if we need to reorder the calls. Would need to look at this
further.

2. The same issue exists in 2.2 except that the Datanode identifier is not a UUID. I changed the affected version back to 2.2 which Eric used when filing.
3. Patch attached. I made this a sub-task of HDFS-2832 since the fix depends on those changes, and to make it easier to track for any subsequent merge work.
4. +1 for the patch. I've made a similar change internally and can confirm that it fixes the issue we are seeing in our {{FsDatasetSpi}} plugin.
5. Thanks for reviewing Eric. I apologize for not asking whether you were already working on it. :-(
6. {color:red}-1 overall{color}. Here are the results of testing the latest attachment
<http://issues.apache.org/jira/secure/attachment/12618477/HDFS-5454.01.patch> against trunk revision .
{color:green}+1 @author{color}. The patch does not contain any @author tags. {color:red}-1 tests included{color}. The patch doesn't appear to include any new or modified tests. Please justify why no new tests are needed for this patch. Also please list what manual steps were performed to verify this patch. {color:green}+1 javac{color}. The applied patch does not increase the total number of javac compiler warnings. {color:green}+1 javadoc{color}. The javadoc tool did not generate any warning messages. {color:green}+1 eclipse:eclipse{color}. The patch built with eclipse:eclipse. {color:green}+1 findbugs{color}. The patch does not introduce any new Findbugs (version 1.3.9) warnings. {color:green}+1 release audit{color}. The applied patch does not increase the total number of release audit warnings. {color:red}-1 core tests{color}. The patch failed these unit tests in hadoop-hdfs-project/hadoop-hdfs: org.apache.hadoop.hdfs.TestInjectionForSimulatedStorage
org.apache.hadoop.hdfs.TestPread org.apache.hadoop.hdfs.TestReplication
org.apache.hadoop.hdfs.TestSmallBlock
org.apache.hadoop.hdfs.server.balancer.TestBalancerWithNodeGroup
org.apache.hadoop.hdfs.server.datanode.TestDataNodeMetrics
org.apache.hadoop.hdfs.server.balancer.TestBalancerWithEncryptedTransfer
org.apache.hadoop.hdfs.TestFileCreation org.apache.hadoop.hdfs.TestSetrepIncreasing
org.apache.hadoop.hdfs.server.balancer.TestBalancerWithHadoopNameNodes
org.apache.hadoop.hdfs.server.balancer.TestBalancerWithMultipleNameNodes
org.apache.hadoop.hdfs.server.blockmanagement.TestBlockTokenWithDFS
org.apache.hadoop.hdfs.server.namenode.TestFileLimit
org.apache.hadoop.hdfs.server.balancer.TestBalancer {color:green}+1 contrib tests{color}. The patch passed contrib unit tests. Test results: <https://builds.apache.org/job/PreCommit-HDFS-Build/5708/testReport/> Console output: <https://builds.apache.org/job/PreCommit-HDFS-Build/5708/console> This message is automatically generated.
7. Updated patch.
8. **body:** {color:red}-1 overall{color}. Here are the results of testing the latest attachment
<http://issues.apache.org/jira/secure/attachment/12618671/HDFS-5454.02.patch> against trunk revision .
{color:green}+1 @author{color}. The patch does not contain any @author tags. {color:red}-1 tests included{color}. The patch doesn't appear to include any new or modified tests. Please justify why no new tests are needed for this patch. Also please list what manual steps were performed to verify this patch. {color:green}+1 javac{color}. The applied patch does not increase the total number of javac compiler warnings. {color:green}+1 javadoc{color}. The javadoc tool did not generate any warning messages. {color:green}+1 eclipse:eclipse{color}. The patch built with eclipse:eclipse. {color:green}+1 findbugs{color}. The patch does not introduce any new Findbugs (version 1.3.9) warnings. {color:green}+1 release audit{color}. The applied patch does not increase the total number of release audit warnings. {color:green}+1 core tests{color}. The patch passed unit tests in hadoop-hdfs-project/hadoop-hdfs. {color:green}+1 contrib tests{color}. The patch passed contrib unit tests. Test results: <https://builds.apache.org/job/PreCommit-HDFS-Build/5713/testReport/> Console output: <https://builds.apache.org/job/PreCommit-HDFS-Build/5713/console> This message is automatically generated.
label: test
9. Update patch to add test case.
10. {color:green}+1 overall{color}. Here are the results of testing the latest attachment
<http://issues.apache.org/jira/secure/attachment/12618793/HDFS-5454.03.patch> against trunk revision .
{color:green}+1 @author{color}. The patch does not contain any @author tags. {color:green}+1 tests included{color}. The patch appears to include 1 new or modified test files. {color:green}+1 javac{color}.

The applied patch does not increase the total number of javac compiler warnings. {color:green}+1 javadoc{color}. The javadoc tool did not generate any warning messages. {color:green}+1 eclipse:eclipse{color}. The patch built with eclipse:eclipse. {color:green}+1 findbugs{color}. The patch does not introduce any new Findbugs (version 1.3.9) warnings. {color:green}+1 release audit{color}. The applied patch does not increase the total number of release audit warnings. {color:green}+1 core tests{color}. The patch passed unit tests in hadoop-hdfs-project/hadoop-hdfs. {color:green}+1 contrib tests{color}. The patch passed contrib unit tests. Test results: <https://builds.apache.org/job/PreCommit-HDFS-Build/5723//testReport/> Console output: <https://builds.apache.org/job/PreCommit-HDFS-Build/5723//console> This message is automatically generated.

11. +1. Patch looks good to me. Thanks for this refactoring. Aript!
12. Thanks Junping (and congrats on your committer +1). I committed it to trunk.
13. SUCCESS: Integrated in Hadoop-trunk-Commit #4889 (See [<https://builds.apache.org/job/Hadoop-trunk-Commit/4889/>]) HDFS-5454. DataNode UUID should be assigned prior to FsDataset initialization. (Arpit Agarwal) (arp: <http://svn.apache.org/viewcvcs.cgi/?root=Apache-SVN&view=rev&rev=1551296>) *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/CHANGES.txt *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/main/java/org/apache/hadoop/hdfs/server/datanode/DataNode.java *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/test/java/org/apache/hadoop/hdfs/server/datanode/TestDataNodeInitStorage.java
14. FAILURE: Integrated in Hadoop-Yarn-trunk #424 (See [<https://builds.apache.org/job/Hadoop-Yarn-trunk/424/>]) HDFS-5454. DataNode UUID should be assigned prior to FsDataset initialization. (Arpit Agarwal) (arp: <http://svn.apache.org/viewcvcs.cgi/?root=Apache-SVN&view=rev&rev=1551296>) *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/CHANGES.txt *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/main/java/org/apache/hadoop/hdfs/server/datanode/DataNode.java *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/test/java/org/apache/hadoop/hdfs/server/datanode/TestDataNodeInitStorage.java
15. SUCCESS: Integrated in Hadoop-Hdfs-trunk #1615 (See [<https://builds.apache.org/job/Hadoop-Hdfs-trunk/1615/>]) HDFS-5454. DataNode UUID should be assigned prior to FsDataset initialization. (Arpit Agarwal) (arp: <http://svn.apache.org/viewcvcs.cgi/?root=Apache-SVN&view=rev&rev=1551296>) *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/CHANGES.txt *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/main/java/org/apache/hadoop/hdfs/server/datanode/DataNode.java *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/test/java/org/apache/hadoop/hdfs/server/datanode/TestDataNodeInitStorage.java
16. FAILURE: Integrated in Hadoop-Mapreduce-trunk #1641 (See [<https://builds.apache.org/job/Hadoop-Mapreduce-trunk/1641/>]) HDFS-5454. DataNode UUID should be assigned prior to FsDataset initialization. (Arpit Agarwal) (arp: <http://svn.apache.org/viewcvcs.cgi/?root=Apache-SVN&view=rev&rev=1551296>) * /hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/CHANGES.txt * /hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/main/java/org/apache/hadoop/hdfs/server/datanode/DataNode.java *
/hadoop/common/trunk/hadoop-hdfs-project/hadoop-hdfs/src/test/java/org/apache/hadoop/hdfs/server/datanode/TestDataNodeInitStorage.java
17. Merged to branch-2. Target version set to 2.4.0.