[HBase-6299](https://www.google.com/url?q=https://issues.apache.org/jira/browse/HBASE-6299&sa=D&source=editors&ust=1751363035563781&usg=AOvVaw3nd-3vJ91-P6ObWPT99iKk)

**RS starting region open while failing ack to HMaster.sendRegionOpen() causes inconsistency in HMaster's region state and a series of successive problems**

**(1)  Log information**

**(1.1) Roles in this case**

HMaster  assigns a region (by sending RPC\_OPEN) to    RegionServer

RegionServer  updates the state to   ZooKeeper                     ZooKeeper  notifies  HMaster

**(1.2) Symptoms**

HMaster tries to assign the region CDR\_STATS\_TRAFFIC to RS-006(8078)

2012-06-29 07:03:38,870 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Using pre-existing plan for region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568.; plan=hri=CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568., src=swbss-hadoop-004,60020,1340890123243, dest=swbss-hadoop-006,60020,1340890678078

2012-06-29 07:03:38,870 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Assigning region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. to swbss-hadoop-006,60020,1340890678078

2012-06-29 07:03:38,870 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=M\_ZK\_REGION\_OFFLINE, server=swbss-hadoop-002:60000, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:06:28,882 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=RS\_ZK\_REGION\_OPENING, server=swbss-hadoop-006,60020,1340890678078, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:06:32,291 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=RS\_ZK\_REGION\_OPENING, server=swbss-hadoop-006,60020,1340890678078, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:06:32,299 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=RS\_ZK\_REGION\_OPENED, server=swbss-hadoop-006,60020,1340890678078, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:06:32,299 DEBUG org.apache.hadoop.hbase.master.handler.OpenedRegionHandler: Handling OPENED event for CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. from serverName=swbss-hadoop-006,60020,1340890678078, load=(requests=518945, regions=575, usedHeap=15282, maxHeap=31301); deleting unassigned node

2012-06-29 07:06:32,299 DEBUG org.apache.hadoop.hbase.zookeeper.ZKAssign: master:60000-0x2377fee2ae80007 Deleting existing unassigned node for b713fd655fa02395496c5a6e39ddf568 that is in expected state RS\_ZK\_REGION\_OPENED

2012-06-29 07:06:32,301 DEBUG org.apache.hadoop.hbase.zookeeper.ZKAssign: master:60000-0x2377fee2ae80007 Successfully deleted unassigned node for region b713fd655fa02395496c5a6e39ddf568 in expected state RS\_ZK\_REGION\_OPENED

HMaster has handled all the events from ZK successfully. When HMaster is processing RS\_ZK\_REGION\_OPENED, it will call the OpenedRegionHandler and remove region state from RegionsInTransition(RIT, in HMaster’s memory). Because the RS\_ZK\_REGION\_OPENED indicates that the region is open on the specific RS successfully.

2012-06-29 07:06:32,301 DEBUG org.apache.hadoop.hbase.master.handler.OpenedRegionHandler: The master has opened the region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. that was online on serverName=swbss-hadoop-006,60020,1340890678078, load=(requests=518945, regions=575, usedHeap=15282, maxHeap=31301)

For the first assign attempt, HMaster’s ServerManager calls sendRegionOpen() (and it will call RS.openRegion()). However, due to the network problem, HMaster fails to receive the response for the openRegion() call, and the call times out. (This timeout is not the regionState timeout which is monitored by TimeoutMonitor)

2012-06-29 07:07:41,140 WARN org.apache.hadoop.hbase.master.AssignmentManager: Failed assignment of CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. to serverName=swbss-hadoop-006,60020,1340890678078, load=(requests=0, regions=575, usedHeap=0, maxHeap=0), trying to assign elsewhere instead; retry=0

java.net.SocketTimeoutException: Call to /172.16.0.6:60020 failed on socket timeout exception: java.net.SocketTimeoutException: 120000 millis timeout while waiting for channel to be ready for read. ch : java.nio.channels.SocketChannel[connected local=/172.16.0.2:53765 remote=/172.16.0.6:60020]

            at org.apache.hadoop.hbase.ipc.HBaseClient.wrapException(HBaseClient.java:805)

            at org.apache.hadoop.hbase.ipc.HBaseClient.call(HBaseClient.java:778)

            at org.apache.hadoop.hbase.ipc.HBaseRPC$Invoker.invoke(HBaseRPC.java:283)

            at $Proxy8.openRegion(Unknown Source)

            at org.apache.hadoop.hbase.master.ServerManager.sendRegionOpen(ServerManager.java:573)

            at org.apache.hadoop.hbase.master.AssignmentManager.assign(AssignmentManager.java:1127)

            at org.apache.hadoop.hbase.master.AssignmentManager.assign(AssignmentManager.java:912)

            at org.apache.hadoop.hbase.master.AssignmentManager.assign(AssignmentManager.java:892)

            at org.apache.hadoop.hbase.master.handler.ClosedRegionHandler.process(ClosedRegionHandler.java:92)

            at org.apache.hadoop.hbase.executor.EventHandler.run(EventHandler.java:162)

            at java.util.concurrent.ThreadPoolExecutor$Worker.runTask(ThreadPoolExecutor.java:886)

            at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:908)

            at java.lang.Thread.run(Thread.java:662)

Caused by: java.net.SocketTimeoutException: 120000 millis timeout while waiting for channel to be ready for read. ch : java.nio.channels.SocketChannel[connected local=/172.16.0.2:53765 remote=/172.16.0.6:60020]

            at org.apache.hadoop.net.SocketIOWithTimeout.doIO(SocketIOWithTimeout.java:164)

            at org.apache.hadoop.net.SocketInputStream.read(SocketInputStream.java:155)

            at org.apache.hadoop.net.SocketInputStream.read(SocketInputStream.java:128)

            at java.io.FilterInputStream.read(FilterInputStream.java:116)

            at org.apache.hadoop.hbase.ipc.HBaseClient$Connection$PingInputStream.read(HBaseClient.java:301)

            at java.io.BufferedInputStream.fill(BufferedInputStream.java:218)

            at java.io.BufferedInputStream.read(BufferedInputStream.java:237)

            at java.io.DataInputStream.readInt(DataInputStream.java:370)

            at org.apache.hadoop.hbase.ipc.HBaseClient$Connection.receiveResponse(HBaseClient.java:541)

            at org.apache.hadoop.hbase.ipc.HBaseClient$Connection.run(HBaseClient.java:479)

HMaster attemps to assign for a second time, choosing another RS-164(6294).

2012-06-29 07:07:41,142 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: No previous transition plan was found (or we are ignoring an existing plan) for CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. so generated a random one; hri=CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568., src=, dest=swbss-hadoop-164,60020,1340888346294; 15 (online=15, exclude=serverName=swbss-hadoop-006,60020,1340890678078, load=(requests=0, regions=575, usedHeap=0, maxHeap=0)) available servers

2012-06-29 07:07:41,142 DEBUG org.apache.hadoop.hbase.zookeeper.ZKAssign: master:60000-0x2377fee2ae80007 Creating (or updating) unassigned node for b713fd655fa02395496c5a6e39ddf568 with OFFLINE state

2012-06-29 07:07:41,145 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Using pre-existing plan for region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568.; plan=hri=CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568., src=, dest=swbss-hadoop-164,60020,1340888346294

2012-06-29 07:07:41,145 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Assigning region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. to swbss-hadoop-164,60020,1340888346294

2012-06-29 07:07:41,149 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=RS\_ZK\_REGION\_OPENING, server=swbss-hadoop-164,60020,1340888346294, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:07:41,150 WARN org.apache.hadoop.hbase.master.AssignmentManager: Received OPENING for region b713fd655fa02395496c5a6e39ddf568 from server swbss-hadoop-164,60020,1340888346294 but region was in  the state null and not in expected PENDING\_OPEN or OPENING states

2012-06-29 07:07:41,296 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=RS\_ZK\_REGION\_OPENING, server=swbss-hadoop-164,60020,1340888346294, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:07:41,296 WARN org.apache.hadoop.hbase.master.AssignmentManager: Received OPENING for region b713fd655fa02395496c5a6e39ddf568 from server swbss-hadoop-164,60020,1340888346294 but region was in  the state null and not in expected PENDING\_OPEN or OPENING states

2012-06-29 07:07:41,302 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Handling transition=RS\_ZK\_REGION\_OPENED, server=swbss-hadoop-164,60020,1340888346294, region=b713fd655fa02395496c5a6e39ddf568

2012-06-29 07:07:41,302 WARN org.apache.hadoop.hbase.master.AssignmentManager: Received OPENED for region b713fd655fa02395496c5a6e39ddf568 from server swbss-hadoop-164,60020,1340888346294 but region was in  the state null and not in expected PENDING\_OPEN or OPENING states

Since the regionState in RIT is removed by the OpenedRegionHandler when the first assign finishes. HMaster fails to handle the transitions (RS\_ZK\_REGION\_OPENING, RS\_ZK\_REGION\_OPENED) from ZK, that is, it fails to update the regionState in RIT and ignores the transitions from znode(ZK).

Then the HMaster’s balancer triggers “unassignment of region”, which also fails.

2012-06-29 07:08:38,872 INFO org.apache.hadoop.hbase.master.HMaster: balance hri=CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568., src=swbss-hadoop-006,60020,1340890678078, dest=swbss-hadoop-008,60020,1340891085175

2012-06-29 07:08:38,872 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Starting unassignment of region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. (offlining)

2012-06-29 07:08:47,875 DEBUG org.apache.hadoop.hbase.master.AssignmentManager: Sent CLOSE to serverName=swbss-hadoop-006,60020,1340890678078, load=(requests=0, regions=0, usedHeap=0, maxHeap=0) for region CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568.

...

2012-06-29 08:04:37,681 INFO org.apache.hadoop.hbase.master.AssignmentManager: Regions in transition timed out:  CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. state=PENDING\_CLOSE, ts=1340926468331, server=null

2012-06-29 08:04:37,681 INFO org.apache.hadoop.hbase.master.AssignmentManager: Region has been PENDING\_CLOSE for too long, running forced unassign again on region=CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568.

2012-06-29 08:04:47,681 INFO org.apache.hadoop.hbase.master.AssignmentManager: Regions in transition timed out:  CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568. state=PENDING\_CLOSE, ts=1340926468331, server=null

2012-06-29 08:04:47,682 INFO org.apache.hadoop.hbase.master.AssignmentManager: Region has been PENDING\_CLOSE for too long, running forced unassign again on region=CDR\_STATS\_TRAFFIC,13184390567|20120508|17||2|3|913,1337256975556.b713fd655fa02395496c5a6e39ddf568.