背景

- flink 版本号 1.6.2
- flink 集群模式 flink on yarn

- 使用flink 读取kafka 数据 简单处理之后使用自定义richWindowFunction 处理数据的时候出现异常报错:

```
AsynchronousException{java.lang.Exception: Could not materialize checkpoint 20 for operator Window(TumblingProcessingTimeWindows(5), ProcessingTimeTrigger, MyRichRedisWindowFuntion) (1/8).}
    at org.apache.flink.streaming.runtime.tasks.StreamTask$AsyncCheckpointExceptionHandler.tryHandleCheckpointException(StreamTask.java:1153)
    at org.apache.flink.streaming.runtime.tasks.StreamTask$AsyncCheckpointRunnable.handleExecutionException(StreamTask.java:947)
    at org.apache.flink.streaming.runtime.tasks.StreamTask$AsyncCheckpointRunnable.run(StreamTask.java:884)
    at java.util.concurrent.Executors$RunnableAdapter.call(Executors.java:511)
    at java.util.concurrent.FutureTask.run(FutureTask.java:266)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1142)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:617)
    at java.lang.Thread.run(Thread.java:745)
Caused by: java.lang.Exception: Could not materialize checkpoint 20 for operator Window(TumblingProcessingTimeWindows(5), ProcessingTimeTrigger, MyRichRedisWindowFuntion) (1/8).
    at org.apache.flink.streaming.runtime.tasks.StreamTask$AsyncCheckpointRunnable.handleExecutionException(StreamTask.java:942)
    ... 6 more
Caused by: java.util.concurrent.ExecutionException: java.io.IOException: Size of the state is larger than the maximum permitted memory-backed state. Size=5249873 , maxSize=5242880 . Consider using a different state backend, like the File System State backend.
    at java.util.concurrent.FutureTask.report(FutureTask.java:122)
    at java.util.concurrent.FutureTask.get(FutureTask.java:192)
    at org.apache.flink.util.FutureUtil.runIfNotDoneAndGet(FutureUtil.java:53)
    at org.apache.flink.streaming.api.operators.OperatorSnapshotFinalizer.<init>(OperatorSnapshotFinalizer.java:47)
    at org.apache.flink.streaming.runtime.tasks.StreamTask$AsyncCheckpointRunnable.run(StreamTask.java:853)
    ... 5 more
Caused by: java.io.IOException: Size of the state is larger than the maximum permitted memory-backed state. Size=5249873 , maxSize=5242880 . Consider using a different state backend, like the File System State backend.
    at org.apache.flink.runtime.state.memory.MemCheckpointStreamFactory.checkSize(MemCheckpointStreamFactory.java:64)
    at
org.apache.flink.runtime.state.memory.MemCheckpointStreamFactory$MemoryCheckpointOutput
Stream.closeAndGetBytes(MemCheckpointStreamFactory.java:145)
    at
org.apache.flink.runtime.state.memory.MemCheckpointStreamFactory$MemoryCheckpointOutput
Stream.closeAndGetHandle(MemCheckpointStreamFactory.java:126)
    at
org.apache.flink.runtime.state.CheckpointStreamWithResultProvider$PrimaryStreamOnly.clo
seAndFinalizeCheckpointStreamResult(CheckpointStreamWithResultProvider.java:77)
    at
org.apache.flink.runtime.state.heap.HeapKeyedStateBackend$HeapSnapshotStrategy$1.perfor
mOperation(HeapKeyedStateBackend.java:826)
    at
org.apache.flink.runtime.state.heap.HeapKeyedStateBackend$HeapSnapshotStrategy$1.perfor
mOperation(HeapKeyedStateBackend.java:759)
    at
org.apache.flink.runtime.io.async.AbstractAsyncCallableWithResources.call(AbstractAsync
CallableWithResources.java:75)
    at java.util.concurrent.FutureTask.run(FutureTask.java:266)
    at org.apache.flink.util.FutureUtil.runIfNotDoneAndGet(FutureUtil.java:50)
    ... 7 more
```

- flink 关于 checkpoint 配置 :

  ```
  fs.default-scheme: hdfs://@hadoop:9000/
  fs.hdfs.hadoopconf: hdfs:///flink/data/
  state.checkpoints.dir: hdfs:///flink/checkpoints/
  state.checkpoints.num-retained: 20
  state.savepoints.dir: hdfs:///flink/flink-savepoints/
  state.backend.fs.checkpoint.dir: hdfs:///flink/state/checkpoints/
  ```

疑惑点:

全局设置 checkpoint 保存地址， 那么window 操作的保存地址 应该也是该位置 .

但是为什么还是会将checkpoint 使用memory 方式?

尝试解决办法:

在代码层设置 checkpoint保存模式:

```
env.setStateBackend(new
FsStateBackend("hdfs:///flink/checkpoints/workFlowCheckpoint"));
```

但是在1.6.2 版本 该类没设置为**Deprecated** ， 求问：

我这个解决办法是有什么不准确的方式么？ 还是说 全局设置checkpoint 对于window 自身并没有生效?

谢谢！