

## artdaq - Bug #21077

### SharedMemoryFragmentManager issues with multiple readers

10/09/2018 12:21 PM - Eric Flumerfelt

<b>Status:</b>	Closed	<b>Start date:</b>	10/09/2018
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	Eric Flumerfelt	<b>% Done:</b>	0%
<b>Category:</b>	Needed Enhancements	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>	artdaq_core v3_04_03	<b>Co-Assignees:</b>	
<b>Experiment:</b>	-		
<b>Description</b>			
When multiple processes are connected to the shared memory as readers, it is possible for ReadyForRead to return true, and then control would enter GetBufferForReading. GetBufferForReading, however, could loop infinitely if it cannot actually reserve a buffer because it was taken by another reader.			
The fix on artdaq-core/feature/SharedMemoryReader_GetBufferForReading_LimitedRetries (should be SharedMemoryManager_GetBufferForReading_LimitedRetries) removes the infinite loop, replacing it with a more modest 5 retries. When the function fails, SharedMemoryFragmentManager will call ReadyForRead again.			
Without this change, readers in transfer_driver shmем nonblocking mode tests can hang forever near the end of data.			
<b>Related issues:</b>			
Related to artdaq - Bug #20976: multiple_art_processes_example broken		<b>Closed</b>	<b>09/28/2018</b>

### History

#### #1 - 10/09/2018 12:22 PM - Eric Flumerfelt

- Status changed from New to Resolved

```
[eflumerf@ironwork artdaq_core]$ git checkout feature/SharedMemoryReader_GetBufferForReading_LimitedRetries
Switched to branch 'feature/SharedMemoryReader_GetBufferForReading_LimitedRetries'
[eflumerf@ironwork artdaq_core]$ git diff feature/Sep10_pdune_candidate
diff --git a/artdaq-core/Core/SharedMemoryManager.cc b/artdaq-core/Core/SharedMemoryManager.cc
index d0fc529..00666f3 100644
--- a/artdaq-core/Core/SharedMemoryManager.cc
+++ b/artdaq-core/Core/SharedMemoryManager.cc
@@ -213,7 +213,7 @@ void artdaq::SharedMemoryManager::Attach()
     else
     {
         TLOG(TLVL_ERROR) << "Failed to connect to shared memory segment with key 0x" << std::hex << sh
m_key_
-         << ", errno = " << strerror(errno) << ". Please check "
+         << ", errno=" << errno << " (" << strerror(errno) << ")" << ". Please check "
         << "if a stale shared memory segment needs to "
         << "be cleaned up. (ipcs, ipcrm -m <segId>>";
     }
@@ -229,9 +229,8 @@ int artdaq::SharedMemoryManager::GetBufferForReading()
    auto rp = shm_ptr->reader_pos.load();

    TLOG(13) << "GetBufferForReading lock acquired, scanning " << shm_ptr->buffer_count << " buffers";
-    bool retry = true;
-    int buffer_num = -1;
-    while (retry)
+    for(int retry = 0; retry < 5; retry++)
    {
        ShmBuffer* buffer_ptr = nullptr;
        uint64_t seqID = -1;
@@ -291,7 +290,7 @@ int artdaq::SharedMemoryManager::GetBufferForReading()
        TLOG(13) << "GetBufferForReading returning " << buffer_num;
        return buffer_num;
    }
-    retry = false;
+    retry = 5;
}

if(buffer_num==-1) TLOG(13) << "GetBufferForReading returning -1 because no buffers are ready";
```

**#2 - 10/10/2018 02:49 PM - Eric Flumerfelt**

- Related to Bug #20976: *multiple\_art\_processes\_example* broken added

**#3 - 10/12/2018 12:46 PM - Eric Flumerfelt**

- Target version set to *artdaq\_core v3\_04\_03*

**#4 - 10/25/2018 01:41 PM - Eric Flumerfelt**

- Status changed from *Resolved* to *Closed*