

artdaq - Idea #18521

Consider not dropping out-of-sequence requests

12/11/2017 05:09 PM - John Freeman

Status:	Closed	Start date:	12/11/2017
Priority:	Normal	Due date:	
Assignee:	Eric Flumerfelt	% Done:	0%
Category:	Additional Functionality	Estimated time:	0.00 hour
Target version:	artdaq v3_00_01		
Experiment:	-		
Description			
<p>On the protoDUNE DAQ teststand, it's been observed empirically using artdaq's feature/protodune branch (based off of artdaq v2_03_03) that the EventBuilderCore can get fragments from the timing fragment generator out-of-sequence. This can be seen, e.g., in run 1000504. On np04-srv-012:</p>			
<pre>grep "type = 5" /log/eventbuilder/run1000504-eventbuilder1.log</pre>			
<p>reveals that fragment with sequence ID 21 appears before fragment with sequence ID 20.</p>			
<p>The significance of this is the following: in EventStore.cc, starting on l. 114 in artdaq v2_03_03, logic exists whereby a request is only sent up to fragment generators running in pull mode if the sequence ID of the request is higher than the previous highest sequence ID of a sent request. As a consequence, these out-of-order fragments result in some requests never getting sent - e.g., in the example above, the fragment with sequence ID 20 never causes the sequence ID 20 request to get sent to the fragment generators. This Redmine Issue is filed to open a discussion on the possibility of removing the requirement that a sent request never have a sequence ID lower than that of a previously sent request.</p>			

History

#1 - 12/11/2017 05:25 PM - Eric Flumerfelt

This can be a **very** hard error case to detect and recover from, as in any system with more than one EventBuilder (especially systems using RoutingMasters), there is no clear progression of sequence IDs. My initial reaction is therefore to figure out how fragments can arrive out-of-sequence, and fix that issue.

#2 - 01/27/2018 12:44 PM - Eric Flumerfelt

- Category set to Additional Functionality
- Status changed from New to Closed
- Assignee set to Eric Flumerfelt
- Target version set to artdaq v3_00_01

This has been implemented, as *art* does **not** require events to be in-sequence.