artdaq - Idea #7245

Investigate whether we can use an MPI_Barrier to synchronize BoardReaders with a newer version of MPI

10/30/2014 12:26 PM - Kurt Biery

Status:	Closed	**Start date:**	10/30/2014
Priority:	Normal	**Due date:**	
Assignee:	Kurt Biery	**% Done:**	0%
Category:		**Estimated time:**	80.00 hours
Target version:	v1_12_13		
Experiment:	-		

Description

At the moment, we don't have any enforced synchronization between BoardReaders when we are sending fragments. However, there are situations in which it may be nice to have such a thing. (For example, in the demo system when we have multiple BoardReaders.)

Back in the early days of *artdaq*, MPI_Barrier calls were used to provide this functionality, but they were removed so that we wouldn't get into a situation in which we are trying to end a run, but can't, because one of the BoardReaders is stuck waiting for the others to reach the Barrier but instead have already ended the run.

A possible solution to this dilemma (wanting some level of barrier functionality and wanting to have endRun work reliably) is to use barriers with timeouts. The MPI_Barrier call in the version of MPI that we are currently using does not support a timeout, but I believe that a later version of MPI will have that.

If a new version of MPI is needed, there will probably be spin-off issues for validating the new MPI.

Related issues:

Related to artdaq - Feature #10146: Provide moderate synchronization when sen...	**Closed**	**09/01/2015**

History

#1 - 09/15/2015 12:10 PM - Kurt Biery

- Target version changed from 577 to v1_12_13

#2 - 10/30/2015 08:51 AM - Kurt Biery

- Related to Feature #10146: Provide moderate synchronization when sending fragments from multiple BoardReaders added

#3 - 10/30/2015 08:51 AM - Kurt Biery

- Status changed from New to Resolved

This issue was dealt with in Issue #10146.

#4 - 10/30/2015 08:52 AM - Kurt Biery

- Assignee set to Kurt Biery

#5 - 05/23/2016 10:24 AM - Eric Flumerfelt

- Status changed from Resolved to Closed