

AthenaMP SharedReader Developments

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SharedReader

- SharedReader for AthenaMP
- In addition to sharing event Token when iterating, the shared reader can share POOL objects on demand.
- Single SharedReader Process, uses two separate instances of the AthenaSharedMemoryTool:
 1. Event Token sharing between EventSelector
 - Existed for some time, easier as iteration is predictable by the server and Tokens are simple strings.
 2. Data Object sharing between ConversionSvc
 - New prototype, allows on demand read of objects serialized by AthenaSerializationTool (currently implemented using ROOT only)
- At this point, uses shared memory, but could be implemented in Yampl as well.



Performance and Next Steps

- Intended to work for simulation, which uses few container per event.
- Initially found a performance penalty of ~30%, ouch, but functionality seems ok.
- Now, after some improvements, performance seems similar to default AthenaMP:
 - There are still a few loose ends to fix
 - E.g.: Currently AthenaMP calls ReadEvents(maxEvt) several times, but with the object reader this will not work...
 - This hasn't been tested yet
- So far tested only with local file access
- Single reader may have advantages for caching (more memory, all the cache is used), but also may lead to complications (e.g.: cache swapping on boundaries).

